THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—34TH YEAR. SYDNEY, SATURDAY, JUNE 7, 1947. No. 23.

Table of Contents.

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The Beattie-Smith Lectures.[1]

(THE UNIVERSITY OF MELBOURNE.)

SOME ASPECTS OF CHILD DEVELOPMENT AND MENTAL HEALTH.

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LECTURE I.

THE invitation of the Council of the University of Melbourne to deliver the Beattie-Smith lectures is an honour that I deeply appreciate. It is a formidable task, and one can only hope that the high standard of previous addresses will not be departed from too widely. You may remember that when Mr. Gladstone was asked how he prepared his parliamentary orations, he replied: "I wamble them round inside me for a few days." Well, I have been wambling these thoughts round for a good many years, only to find that the wambling has not in any way facilitated final composition. The founder of this lectureship, William Beattie Smith, was an Edinburgh graduate and studied psychiatry under the great Clouston. Coming to Victoria in 1882, he entered the Department of Lunacy as medical officer, subsequently serving in many of the State asylums. He was at Ararat for some years and became an expert vigneron, producing there a light wine of merit called "Golden Chasselas". The turn of the century found him medical superintendent at Kew, where he also lectured to medical students on insanity. He was in line to follow the late Dr. J. R. McCreery as inspector-general, when a disagreement with the Chief Secretary over a disciplinary matter caused his resignation from the department. From then to the year of his death in 1922 he engaged in private practice as a mental specialist with rooms at 2, Collins Street East. I have no personal recollection of Beattie Smith. Photographs in his latter years show a trim appearance, a benevolent expression and a fine pointed beard. He was a bachelor, and living in the golden age of practice when the guinea was worth twenty-one shillings and the Commissioner of Taxation only a boy, he was both willing and able to make a handsome bequest. All honour to his memory; and would that there were more like him!

The terms of his bequest provide for "annual lectures on the early treatment of insanity, as the practitioner and the public are in need of much education on this subject". In the governing regulations this direction is elaborated to include "causation, pathology, symptoms, diagnosis, prognosis, therapeusis, control or prevention, or any of these". It is further laid down that the lectures "may be directed wholly, or in part, specially to medical practitioners or specially to the public". The emphasis, it will be noted, is on "early treatment". Education of the medical profession and of the public is still necessary, and the incidence of mental illness is as great as it was twenty-five years ago—some would say greater. In a message to the United States Congress in November, 1945,[a] President Truman, dealing with national health, made the following statement:

> We have done pitifully little about mental illness. there are at least two million persons in the United States who are mentally ill, and ten million will probably need hospitalization for mental illness for some period of their lifetime. Mental cases occupy more than one-half of the hospital beds at a cost of 500,000,000 dollars per year. We need more mental hospitals, more clinics, and many more trained doctors in this field.

Proportionate figures would apply to this country. The President's statement refers only to people with the more severe kinds of mental disease. To these must be

[1] Delivered at Melbourne on April 21 and 28, 1947.

added a large number whose ill-health or ineffectiveness is due to less incapacitating disorder, usually a psychoneurosis of one sort or another. For this class no accurate statistics exist; but it is likely that from 30% to 40% of all chronic ill-health comes within this category. Nor is this all. If one takes, as I do, a definition of health to mean for any person the full development of his physical, mental and moral potentialities, then the net must be widened to include all whose personality formation has been interfered with by factors of a psychological nature. The most significant of these come into play during childhood, chiefly in relation to home life, schooling and social contacts. Many are preventible. On such a basis it is probable that the majority of human beings are affected by some kind of mental ill-health, whether they realize it or not. The saying that "man is the only animal who does not know how to live" is near the truth. The problem is staggering in its complexity and size, and is today one of the greatest challenges to the medical profession, to other experts—particularly educationists—and to the public.

General Principles.

In these lectures entitled "Some Aspects of Child Development and Mental Health" preventive psychiatry in childhood will be discussed and mention will be made of desirable objectives in this country. The emphasis will be on more or less healthy children, and how to keep them mentally sound as they grow up. At the outset a few generalizations are necessary. Health is too often regarded as a sort of abstraction termed normality. Though abstractions are helpful (especially for teaching purposes), in practice, whilst evolution may have been doing its best over the centuries to produce a standardized product, every human being differs from every other. The more one studies behaviour, the more one is impressed by the range of individual difference. The first generalization, then, is that each child's health is a personal problem, the aim being to achieve full development of his capabilities. One child's meat may be another child's poison. Variations are in part determined by heredity, but knowledge of the transmission of human characteristics is still in its infancy. As Professor A. N. Burkitt stated in a recent address:[2] "How far we have to go may be judged by the fact that we know or suspect the existence of some hundreds of well defined genes in man, whilst the total number may well be fifty thousand or more." Genetic combinations are at present matters of chance, governed by what they pleasantly term in America "random mating". Because there is a lack of exact knowledge on this subject, one finds in modern thought a tendency to overstress the influence of environment on development, to the extent of giving the impression that if we would only manipulate our surroundings along planned lines a state of near perfection might result. It is doubtful if such a gospel is realistic. The drawback to schemes for perfectability lies in the imperfectability of man. As Linklater in "Private Angelo" puts it: "Progress has become a race—and only man has not entered for it." The best environment—familial, social, educational—should certainly be sought; but it must not be overlooked that constitution and character depend on the interaction of both pre-natal and post-natal factors. "The hammer of environment shapes the individual on the anvil of heredity."[3] The qualities of human nature, if they alter at all, will do so at the infinitely slow rate of evolution. It is practicable to aim only at influencing each child so that his good qualities flourish and his bad ones are discouraged. The words "good" and "bad" are used advisedly. Health and education cannot be divorced from morality.

A further idea occurred in an earlier phrase—"keeping children healthy as they grow up". As they grow up—that is the point. Parents do not bring their children up really, nor do teachers train them very much. Every child grows itself up, according to the inherent capacity of all young life to mature, and usually, if permitted, to mature along healthy lines. That is why "wholesome neglect" may produce better results than intensive nurture. Another generalization is that mind and body are not separate. This does not mean that the concept of a mind and a body is not a useful one. On occasions it will be obvious that an activity is predominantly mental or physical, as the case may be; but never is it exclusively either. In the process of living the two cannot be separated, and they continuously interact. Every person, though possessed of parts, lives and acts as a whole.

The Emotions.

When we come to consider that part of child development termed mental health, it is found that certain requirements have to be met at all stages. Mind, being rather a series of functions than a structural entity, is elusive and hard to define. It may be considered as that part of us which feels and thinks and integrates behaviour. For many centuries—and strangely in the light of history—man has been considered a rational being. The education and upbringing of the young have been mainly devoted to training the intellect. This attitude is more a tribute to man's vanity than to his good sense. Whilst his superior brain power has enabled him to be the dominant species, and is his outstanding attribute, it is also true that he retains a wide variety of animal emotions or drives, good, bad and indifferent. He feels as well as thinks. It is the realization of the dominant part played by emotion in human behaviour that is an outstanding advance in knowledge, as important I believe, as any other scientific or technological discovery that has dazzled mankind over the past century. Though much research remains for the future, recent psychological studies have already changed the outlook on health and education, and are beginning to influence other branches of social and community life.

In relation to the growing child, and stated in the simplest way, emotions fall into two groups, both necessary for survival. For individual life there are those connected with self—self-preservation, self-regard, self-expression, and for perpetuation of the race there is the urge to reproduction. It seems paradoxical that though man has the greatest brain, in spite of—or rather because of—this the newborn infant is the most helpless of all young animals and has the longest period of immaturity. Throughout childhood, though his knowledge is limited and his early performance indifferent, the child is none the less possessed of well-developed feeling capacity and will enjoy or suffer emotional experiences of similar intensity to those of adults. As he grows and makes contact with the outside world, if he is to achieve the best results, his emotional life must fulfil a dual purpose—self-satisfaction and self-expression—in harmony with that of others. In this process many secondary characteristics will emerge—special abilities, sentiments and attitudes of mind, moral and æsthetic qualities, strengths and weaknesses of character—combining to form the infinitely complex adult person.

Mental Mechanisms.

To appreciate the advantages, or the dangers, of good or bad upbringing it is necessary to understand four common mental activities—repression, mental conflict, the unconscious mind, and the development of anxiety. These concepts originated with Freud's work and have been extended by Jung, Adler, Stekel and other psychiatrists. After any intensely unpleasant, humiliating or terrifying experience, particularly if it is repeated, and if it is one against which the child cannot take successful counteraction, there is a tendency for the memory of and the emotions aroused by the occurrences to be dismissed from consciousness. This is a face-saving and self-sparing device, because continued awareness would be intolerable. But complete obliteration is not achieved, only a kind of bottling-up. This mental process is spoken of as repression. One of the commonest aroused emotions treated in this way is the feeling of agression, the desire to attack someone, to overthrow opposition. As this takes place unconsciously and remains out of consciousness, such activities are spoken of as occurring in the unconscious mind. As time goes on many experiences undergo this process, and it is possible that racial memories may be similarly stored away. As a result the unconscious mind comes to play a most important part in determining or influencing behaviour, especially that which is emotion-

ally conditioned. When strong unconsciously motivated desires run counter to what is considered desirable or right by the individual, or when they oppose the wishes and demands of other persons, a state of mental conflict or tension is set up. The cause of this condition is usually not realized or only vaguely appreciated, and the condition produces a general emotional disturbance or feeling of anxiety. This anxiety state leads to different effects in different people, from a relatively simple bodily dysfunction, such as indigestion or palpitations, to complex personality disorders. It should not be thought that these occurrences always cause serious ill-effects. A certain degree of repression is usual and probably desirable, and the milder degrees of conflict and anxiety tend to resolve without harm. I believe there is a *vis medicatrix naturæ* of the mind as well as of the body. It acts with us, and doubtless at times, in spite of us. Psychological upsets of these types are more common in early life and more potentially dangerous at this formative stage. Indeed, the foundations of mental health or ill-health are laid in childhood. Not only are anxiety reactions not understood by those affected, but only too often they are unconsciously used as an attempted escape mechanism—as a means of both avoiding the issue and getting some benefit from the dilemma. This attitude is neurotic, and the tragedy is that it never really works. Understanding of this condition is of the greatest importance, as neuroticism in some form or other is the commonest personality disorder. One of the chief aims of child psychiatry is either the prevention of neurosis or its early recognition and treatment.

Basic Needs.

The child's first outside contacts are with his parents. His early wants are few but vital. In the discussion of these during the early years—the infant and pre-school stage—the main requirements will be indicated, together with the benefits following healthy progress or the drawbacks arising if all does not go well. Primary needs include food, protection, activity and its corollary rest, sense experience including talking, and finally appreciation and love. The first three, providing as they do for nutrition, bodily safety and comfort, and exercise, are usually dealt with in pædiatric literature as physical factors; but they also have psychological significance. Consider food first. Proper feeding with satisfaction of appetite goes a long way towards producing a contented infant. Conversely, a hungry, complaining baby has an attitude of dissatisfaction with life that cannot be desirable. As necessary as providing the right food is giving it in the right way. Even in early infancy one not infrequently sees examples of hostility to feeding leading to both nutritional problems and an irritable, highly-strung baby. Most often this is caused by the over-anxious, intense mother who conveys her emotional upset to her baby. A vicious cycle can be set up which may require temporary separation for its cure. In this regard the question of breast feeding is of interest. On evolutionary grounds one would expect the breast-fed infant, owing to the more natural and intimate relationship, to be the happier. This has not been apparent in my experience, and it appears that—other things being equal—the bottle-fed infant suffers no emotional ill-effects; but it may be that breast feeding is more satisfying to the mother. Psychological factors in weaning and the establishment of solid diet are of no less importance. This situation is one of the earliest and most common in which the wishes of the child come up against adult power and opposition. I have no doubt that some children are born with more aggressiveness and determination to get their own way than others. If such a child's introduction to a new food is unpleasant or upsetting and if his mother is too insistent, a clash of wills results. If this is continued, meal time becomes not a natural response to appetite, but a battle which the child usually wins, even if he becomes somewhat of a wreck in the process. Force fails in these cases. Equally ineffective are the efforts of those over-anxious people who believe that their children must have certain foods in carefully specified amounts, lest serious illness—if not death—befall. Punishment and cajolery are tried in varying proportions, all to no avail. One of the most difficult feats is to convince them that having tried everything they must now try nothing—that by their so doing their offspring will not perish of starvation and may ultimately get a natural attitude to food. Not a little of this state of mind was attributable in the early days of infant welfare work to an inflexible rigidity of feeding systems, and the artless idea that all babies are alike. One is glad to note a more sensible approach nowadays, although individual variations may still be insufficiently appreciated. The writings of C. A. Aldrich and his confreres in America have been a wholesome corrective to over-regimentation. The psychological advantages of proper feeding are a natural attitude to food and eating, a feeling of well-being following appetite satisfaction—a contribution to the sense gratification of the child—and an absence of anxiety reactions.

Along with "protection" are such needs as warmth, support, attention to other bodily wants, freedom from fright, pain or discomfort, and a general feeling of safety. These needs are more urgent in infancy and diminish as the child becomes older and more self-reliant; but the desire for safety and security is vital up to and through adolescence, and is one of the foundations of adult integrity and confidence. Harmful fears are also minimized under these conditions. The problem of fear is complex. Briefly, there are certain fears that are necessary—for example, fear of things that are really dangerous like fire and drunken motor drivers. With explanation, encouragement and example the child will develop a sensible attitude of caution in such cases, rather than sudden panic. Then there are unreasonable fears that are almost always due to foolish adult suggestion—for example, fear of the dark, of mice, of doctors. Even unfortunate accidents—being bitten by a dog, for example—are unlikely to cause permanent effects unless too much is made of the incident. Such minor fears are commonest at about three years of age and tend to be forgotten. Of more significance are general fear states following repressed terror. Here the cause is not realized by the child, and often not by the parents either, and the result is acute anxiety. Experiences leading to fear of loss of parental love, of severe punishment, of unpardonable wrongdoing, for example, may react in this way. Reference to bodily wants leads to consideration of bladder and bowel control. Here the enthusiasm of the would-be expert often outruns common sense. We should be guided more by nature and less by convention and still less by the predilections of the nursemaid. In 1692 John Locke in "Thoughts Concerning Education" advocated strict training of children in daily bowel evacuations, but on the other hand deprecated regularity of meals. Since then much—perhaps too much—has been written on the subject. It should be recalled that it is not natural for the infant or any other animal to refrain from excretion when he feels disposed, and the ability to keep the bladder outlet contracted throughout ten or twelve hours of sleep is a habit that has to be learnt and practised whilst the conscious mind is in abeyance. To me the surprising thing is not that the toddler occasionally wets his bed, so much as that he ever does otherwise. Normally bowel control should not be expected before twenty months, or bladder control before two years of age. If too strenuous efforts to establish regular habits are made much before these ages, and especially if punishment or expressions of disgust follow failure, the child is likely to suffer anxiety and repressed aggression. This may show itself in enuresis or in some less obviously associated behaviour disorder, then or later. Some training can be attempted at an earlier age, conforming to the baby's natural rhythm of elimination; but it should be done unemotionally, and accidents should be ignored. After the age of two years self-reliance should be encouraged and success praised. The treatment of bed-wetting, of bowel dysfunction of psychological origin or of associated emotional upset is outside my present scope. It is often made more complex by the anatomical association of the eliminatory and the sex organs. I have often thought that whilst Nature appears to have achieved an engineering triumph in using the same apparatus for

two different purposes, psychologically it is a serious mistake. The sense of shame and fear associated with the idea of dirtiness so often overstressed to the young in toilet training can be linked up with similar wrong attitudes to sex.

Activity.

So far we have discussed some needs serving self-preservation. The next group is more concerned with self-expression and may be called activity needs. These include bodily movements and skills, and experiences leading to training of the senses and the intelligence. The healthy, growing child is literally a bundle of energy and must be doing something. At an early age he is also a creature of impulse. He delights, not only in exercise and bodily action requiring strength, coordination and poise, like running, climbing and the many games of childhood, but also in the finer accomplishments of hand and eye, and he wants to do these things at once, changing to something else as soon as he feels like it. Fortunate indeed is the youngster with space, time and opportunity for such enjoyments. They are best provided in country life, which has the added virtue of a close contact with nature. It is tragic that in many cities scope for action is so pitifully limited for the majority of children. As the child grows, many other interests need satisfaction. It is a fascinating study. Rapidly and progressively the mind expands. New thoughts, fresh aptitudes emerge. Power of concentration improves, vocabulary increases and knowledge of the world extends. Love of the beautiful is early apparent and shows itself through appreciation of music, colour and design. Imagination and curiosity are ever active; vivid phantasies are not uncommon. As he passes out of the sensuous and manipulative stage of early childhood, the child's mode of intelligence alters. Mental experience becomes less personal, and abstract thought a possibility. The requirements at various ages both for emotional and intellectual development are set out in many books. A knowledge of these is valuable, enabling parents and others responsible to provide the proper opportunities at the right time, and prevents their expecting too much, too soon. The child, too, benefits in all-round development and gains confidence through achievement.

Sex.

Having touched on the main springs of action concerning the self, we now come to the other great biological drive, the urge to reproduction. At once a difficulty in the English language confronts us. If this is referred to as sex, the majority of people—thanks to over-emphasis on this aspect today—envisage physical sex relations only. If the term love-life is used it has all the nauseous implications of the over-sentimental novel. We need an expression combining both love and sex in the widest sense of each word. Whatever we call it, the child's sex, or love life, commences at birth. This is based on the age-old fact—newly appreciated in the light of modern knowledge—that it is natural for parents to feel love and affection for their offspring, and for this feeling to be strongly reciprocated. In the young child, and especially in the very young, from birth to four or five years old, this atmosphere is just as vital as the air he breathes. Without this love in sufficiently continuous and satisfying amounts he will feel insecure, not wanted, anxious. As with other deprivations, the child's exact reaction will vary with his make-up, and with differing circumstances. It is thought by some psychiatrists that this emotion has, often unconsciously, the most profound effect on personality, for good or ill, of all mental forces. Although a wealth of thought-provoking material on sex aberrations has been collected by psycho-analytical methods, I do not think it necessary for other than specialists in psychopathology to become familiar with the Freudian theory of infantile sexuality. For one thing I rather doubt if, taken in its entirety, it is correct. Whilst many deductions following analytical study of the unconscious mind are valid, and in individual instances of abnormality some or all of the Freudian mechanisms are relevant, I do not think that they apply universally to sex development, or in the explanation of all psychological disorders of neurotic type. I agree with McDougall when he says "all love is not sexual";[4] nor is all love sensuous. A great deal more research is required into the conscious—as opposed to the unconscious—sex life of childhood before a complete and balanced picture is obtained. Those interested in more detailed criticism of the Freudian hypotheses I refer to Dr. Leo Kanner's paper on "Infantile Sexuality".[5] Whatever the truth, it is widely held that the normality or otherwise of adult sex life is based on the child's early experience. This takes place along two slightly different lines. First, and probably most important, is the progress through its various phases of the love-attachment of the child for the parent. It is never a simple matter, for as well as the feeling of love, strong emotions of a contrary nature may be simultaneously aroused. For instance, the young son may feel some jealousy—as well as affection and admiration—towards his father as a rival. Also, as well as feeling affection, he can experience aversion or even hatred. If such conflicting emotions are too strongly or frequently aroused—especially in the first few years—serious anxiety results. In later childhood, as the age of nine or ten years is reached and adolescence approaches, the quality of his love begins to undergo a subtle transformation. The biological reason for this is apparent. From being a dependent—almost parasitic—entity, the child is now preparing for adult independence and responsibility with all that this signifies both sexually and otherwise. The voyager not only gets ready to weigh anchor and set sail on the sea of life, but before doing so he must loosen and finally cast off the ropes that have hitherto bound him emotionally to his mother and father. Sexually, the harbour he seeks is the love of a mate, the founding of a new family. Thus is the cycle of life completed and the deepest of biological urges satisfied. Adolescence is the great change-over. It is apt to be rather a stormy time, with a good deal of faltering, of looking back to the security of childhood, and sometimes a phase of homosexual attachment to be negotiated. Usually, if the child is given a chance (a reasonably happy early childhood), this period is got through safely enough, though ignorance and artificial conditions of living, late marriage especially, make the transition by no means easy.

Alongside this basic sex pattern will be a number of significant events. Briefly they may be described as how the child becomes aware of the meaning of adult sex life. If parents and other grown-ups all had a sensible and natural attitude to sex, there would be less difficulty. Although we are rather better in this regard than our eminent Victorian forebears, there is still an element of secrecy, of indelicacy, or of feverish over-interest in our attitude to children's perfectly natural curiosity about sex in general and from time to time in their own sexual or sensuous feelings and experiences. There should be no need for anyone, parent or teacher, to make special efforts to instruct—no need for orations on the evasively called "facts of life". Answer the child's inquiries on sex honestly as they arise, in an unemotional manner and with the degree of detail suited to his age—particularly avoid an atmosphere of secrecy, embarrassment, fear or shame—and he will get to know about sex as millions of children have in the past, by his own curiosity and observation. I am opposed to what is known as "sex education", especially to class instruction. It is the wrong approach. Many books on the subject are also undesirable. They are usually delightfully vague or ardently anatomical. They tell too little or too much. The reader is either confused, or worried by learning for the first time of all sorts of difficulties. In any event his own particular problem is unlikely to be met. For the general information of children from the age of ten to twelve years there are some books of value—De Schweinitz's "Growing Up", for instance. Adolescents need definite, clear and unequivocal advice. This should come from their parents. If not, the best substitute is probably a knowledgeable doctor. Even here I think an individual talk is usually preferable to class lectures. After all, sex is not a subject to be learnt, like algebra, but an experience to be lived, and everyone has to live it for himself (and where I say "himself" in these lectures I mean "herself"

too). Sex, moreover, is not an end in itself. It is part of life as a whole and interacts with all the other forces I have mentioned. Lack of success in one direction may jeopardize progress in another. Health means balance—things in proportion. "Nothing too much" the Greeks used to say; "everything enough" might be better. The emotion of love is significant in an even wider sense. Earlier I mentioned that individual health meant full personality development in harmony with that of others. As well as personal aims man has social objectives; he cannot live unto himself alone, and so far, only too obviously, has not learnt how to live as a social being. His innate selfishness and lust for power have prevented him. Is there, then, an insoluble dilemma—man the individual versus society? On this riddle I shall venture only a few comments. Is not the crux of the situation that if mankind is ever to live together harmoniously, greater altruism must be shown? Altruism means ability to love one's neighbour. I mention this because some psychiatrists, and particularly Adler in his later years, have come to believe that this ability is closely linked with, and indeed grows out of, the child's first love for his parents and later for his brothers and sisters in the family. Adler refers to this projection as the basis of "social interest", as he calls it.[6][7] In other words, if I understand him aright, he has from his own psychological studies developed a viewpoint similar in this respect to that of Christianity. It may be that altruism is compounded of a further instinct. McDougall has stated that self-regard includes the ideal of the self-in-its-social setting, not in isolation.[8] Hence the desire of the self to realize ideals of conduct in social action. Along these lines the apparent dilemma may be resolved. Man achieves the highest satisfaction in his social setting, not in antagonism to it. This does not mean that he should live only for the community, but that he must live, and indeed wishes to live, with the community. The question arises, may not his present lack of consideration for his fellows be based on some inner disharmony in his own personality?

Confidence.

So much for the rôle of the emotions as they develop in early childhood. This evening I have dealt with the child in the family because this is the most important human relationship. One of the greatest gains received from proper family life is confidence. Now this is not achieved by telling a child how desirable it is, or by pointing out his lack of it. He must get it for himself. This will be made possible firstly by encouragement to try, both through adult help and in imitation of other children. Secondly, confidence follows reasonable success in the doing; and thirdly, it is fostered by praise or appreciation after achievement. On the other hand, a feeling of inferiority due to lack of self-confidence is a most serious handicap. There are two somewhat different types of children in which this is seen—the spoilt child, and the "squashed" child. In extreme cases the spoilt child is produced by a long course of over-protection, over-indulgence and over-assistance. He is not allowed to face any difficulties, he has no wants, he experiences no hazards. He cannot learn to stand on his own feet, or to act courageously when he grows up. If in addition he is continuously over-praised, he may early in life become a precocious prig, only to subside later like a pricked balloon. One of the saddest results is the child at first spoilt by his parents who later come to hate what they have produced. The "squashed" child is produced in a variety of ways. He may be over-dominated, over-disciplined, in fact, overwhelmed, by adults who are either too self-assertive, too self-opinionated, too strong-minded or too narrow-minded, or who are actuated by the less worthy motives of spite, jealousy or dislike. Plain relentless nagging, or frequent adverse comparison with more favoured members of the family, can do the same thing. Lack of intelligence and natural ability, especially if pronounced, is also a constant source of frustration, and special methods of training are required to make the best of available talents and build up some measure of self-esteem, so that the child may grow to be a useful and stable member of society. Lastly, lack of opportunity from poverty, illness or neglect can be equally crushing in its effect. However produced, the end result is likely to be the same: either the timid, submissive, ineffective adult, often repressing aggression and resentment, or the over-compensated inferiority complex type, full of bluff and show-off, seeking the limelight—sometimes a bully, never really sure of himself and apt to fail in a crisis. Not only do such people usually misunderstand themselves, as the mental changes take place unconsciously, but they are misunderstood by their fellows, who take them at their face value. To save face they are apt to clutch at the straws of neuroticism—"fate is against them", "the job is wrong", "the stomach weak", "the wife unsympathetic". They would be all right if these things were otherwise. It must again be stressed that all this happens in the unconscious mind, the sufferer remaining unaware of the real causes. But it is not so much what happens to people, as how they react to their difficulties that matters. How they will react is largely determined in the first six years of life. The picture is not usually so black as I have just painted; good influences, combined with every child's innate tendency to fight, counterbalance the evil. The majority come through, scarred and not always happy, but with their integrity somehow intact. My last intention is to alarm mothers and fathers, actual or potential, and make them feel that bringing up children is a perilous enterprise. I do not think it is. It requires some knowledge, patience, and a cheerful disposition. If you must believe you are a "problem" parent, the answer is: "Aren't we all?"

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(3) R. M. Lindner: "Rebel Without a Cause", 1945.

(4) W. McDougall: "An Outline of Psychology", Third Edition, 1926, page 431.

(5) L. Kanner: "Infantile Sexuality", *The Journal of Pediatrics*, Volume XV, 1939, page 583.

(6) A. Adler: "Social Interest: A Challenge to Mankind."

(7) P. Bottome: "From the Life" (Chapter on Adler), page 18.

(8) W. McDougall: *Loco citato*, page 433.

THE APPLICATION OF TESTS FOR IN-VIVO ISOSENSITIVITY OF THE RED CELLS OF NEWLY BORN INFANTS.

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Sydney.

IT has been shown that hæmolytic disease of the newborn is due primarily to the immunization of the mother by fœtal antigens. The resulting antibodies traverse the placenta and become attached to the fœtal red cells. These "sensitized" cells are ultimately destroyed or agglutinated and the characteristic manifestations of the disease become apparent. Coombs, Mourant and Race[1] have shown that Rh antibody attached to the surface of these red cells can be detected by means of serum from rabbits immunized against human globulin or against human serum. This rabbit "antihuman globulin serum" combines with the immune globulin attached to the surface of the infant's red cells and causes them to agglutinate. Wiener[2] claims that a modification of his conglutination test is as satisfactory for detecting isosensitization of infants' red cells as is the Coombs test.

The practical application of the Coombs test in facilitating the early diagnosis of hæmolytic disease was investigated in a series of affected infants. Attention was given to the period of time during which the results might be considered significant. The relative merits of Wiener's conglutination test and a similar test performed in a 25% concentration of albumin were compared with those of the Coombs test.

[1] From the New South Wales Red Cross Blood Transfusion Service, Sydney.

Materials.

Blood was obtained from 12 infants and their respective mothers. Ten of the infants were suspected of suffering from hæmolytic disease of the newborn, one was stillborn without apparent signs of the disease, and one was examined after the mother's blood had been investigated following a severe transfusion reaction.

A few drops of blood were collected from the infants by pricking the heel and were placed in a small quantity of sterile sodium citrate solution. Venous blood was collected from each mother and allowed to clot in a dry sterile tube.

Rabbit antihuman globulin serum was obtained from the New South Wales Department of Health and preserved with an equal volume of glycerin. For use it was diluted five times with 0·85% saline solution. A 25% solution of human albumin in buffered diluent prepared by the Department of Physical Chemistry of Harvard Medical School was available.

The Rh subgroups were determined by the use of specific anti-Rh′ (anti-C), anti-Rh_o (anti-D) and anti-Rh″ (anti-E) sera. For detecting the presence of Rh antibodies red cells were obtained from subjects of the Rh-negative, Rh_o, Rh_1 and Rh″ subgroups. Artificial Rh′ cells were prepared by treating Rh_1 cells with serum containing incomplete anti-Rh_o (anti-D) antibodies in high titre. Grouping sera obtained from donors with α or β agglutinins in high titre were used for A B O grouping.

Technique.

Cells from both the infants and the mothers were tested for A B O groups; the Rh groups were then determined by the tube method of de Burgh *et alii*.[3] The Coombs test was modified as follows.

The infant's red cells were washed three times with a large volume of 0·85% saline solution. One drop of a 1% suspension of these red cells was mixed with one drop of the diluted rabbit antihuman globulin serum in a test tube measuring three inches by three-eighths of an inch. In another tube one drop of the infant's red cell suspension was mixed with one drop of 0·85% saline solution to act as a control. The tubes were shaken and were incubated at 37° C. for thirty minutes. They were then centrifuged at approximately 500 revolutions per minute for two minutes and the cells gently transferred to a slide with a Pasteur pipette. The cells were examined with the 2/3 objective of the microscope for the presence or absence of agglutination. Naked-eye observations were found to be unreliable.

Wiener's conglutination test was performed by suspending the packed washed infant's red cells in two drops of compatible freshly collected serum, so that the concentration of the cells as judged by the eye was about 1%. The suspension was incubated at 37° C. for one hour and centrifuged, and the cells were examined as in the Coombs test.

A further test was performed, which was similar to Wiener's test except that 25% albumin solution was used instead of serum. This will be referred to as the "albumin test".

Serum from the mothers was examined for complete and incomplete Rh agglutinins by means of the tube method described by de Burgh *et alii*.[3]

Results.

The A B O and Rh subgroups of the infants and mothers are shown in Table I. The results of the Coombs test on the infants' cells and the nature and the titre of the Rh agglutinins in the mothers' serum are also shown. When an infant's red cells gave a positive response to the Coombs test the hospital was requested to submit daily specimens of blood from the infant; but in most cases the cells were not obtained every day. The Coombs test was performed on these cells immediately upon their receipt at the laboratory. This was continued until the cells failed to react to the Coombs test for several consecutive days. The results of these tests are shown in Table II. The tests were performed only on the days indicated.

An attempt was made to determine the period during which sensitized red cells reacted to the Coombs test when stored in 0·85% saline solution at 10° C., by testing the stored cells daily until a negative result was obtained. Table III shows the results obtained from these experiments on those cells which were submitted in sufficient quantity to be tested for several days.

Red cells from eight of the infants which reacted to the Coombs test were tested by Wiener's conglutination test and by the albumin test. Wiener's test gave negative results in all instances, and the result of the albumin test was also negative except in one instance (Case V), in which a very doubtful positive result was obtained.

In Cases IX, X and XI the Rh subgroups of the infants' red cells were such that they could not have given rise to the Rh agglutinins present in the mothers' serum. For instance, in Case IX the infant's subgroup as determined was Rh′, but the mother's serum contained complete anti-

TABLE I.
Results of Tests on Infants and Mothers.

Case Number.	Infant.			Mother.			
	A B O Group.	Rh Group.	Response to Coombs Test.	A B O Group.	Rh Group.	Nature of Rh Agglutinins.	Titre of Agglutinins.
I	A	Rh_1	+	A	Rh−	Anti-Rh′ (anti-C). Anti-Rh_o (anti-D) incomplete.	1/64 1/2
II	O	Rh_1	+	A	Rh−	Anti-Rh_o (anti-D) incomplete.	1/256
III	B	Rh_1	+	B	Rh−	Anti-Rh′ (anti-C). Anti-Rh_o (anti-D) incomplete.	1/2 1/16
IV	B	Rh_1	+	O	Rh−	Anti-Rh′ (anti-C). Anti-Rh_o (anti-D) incomplete.	1/8 1/8
V	B	Rh_2	+	B	Rh−	Anti-Rh_o (anti-D) incomplete.	1/64
VI	AB	Rh_o	+	A	Rh−	Anti-Rh_o (anti-D) incomplete.	1/64
VII	O	Rh_o	+	A	Rh−	Anti-Rh_o (anti-D) complete.	1/512
VIII	A	Rh_1	−	A	Rh−	Anti-Rh_o (anti-D) incomplete.	1/8
IX	O	Rh′	+	O	Rh−	Anti-Rh_o (anti-D) incomplete.	1/64
X	O	Rh−	+	O	Rh′	Anti-Rh_o (anti-D) complete.	1/512
XI	O	Rh′	+	O	Rh−	Anti-Rh_o (anti-D) incomplete.	1/128
XII	A	Rh_o	+	A	Rh−	Anti-Rh_o (anti-D) complete.	1/8

Rh_o (anti-D) agglutinins. Because it was thought that this discrepancy might be associated with the positive response to the Coombs test, cells were collected from the infants and tested for the Rh subgroup over a period of weeks.

CASE IX.—Mrs. C.'s first pregnancy had resulted in the birth of a normal child of blood group O Rh′ four years earlier. At that time she was transfused with her husband's blood (group O Rh_1). The second pregnancy resulted in a miscarriage after three months' gestation. The child of the third pregnancy was born on September 15, 1946. The *vernix caseosa* was golden yellow in colour, and the baby was noted to be pale and to have hæmorrhagic spots. There was no evidence of œdema, but the abdomen was swollen and the liver and spleen were palpable. Between September 15 and October 22 the infant received four transfusions of group O Rh-negative blood. From the second to the fourth day the infant's cells reacted to the Coombs test, but thereafter negative results were obtained. From September 16 to September 30 the cells were group O Rh′, but the reactions with the anti-Rh′ (anti-C) serum became progressively weaker. On several occasions between October 9 and November 11 the cells were found to be Rh-negative, but on December 31 a positive reaction was again obtained with the anti-Rh′ (anti-C) serum.

TABLE II.

Results of Coombs Tests and Progress of the Infants.

Case Number.	Coombs Test.		Blood Transfusions.		Fate of Infant.
	Day After Birth.	Result.	Day After Birth.	Amount in Millilitres.	
I	2 5	+ −	2 4	120 120	Survived.
II	13 19	+ −	25	100	Survived.
III	1	+	−	−	Stillborn.
IV	1 2 3 4	+ + + +	1	80	Died on fifth day.
V	1 2	+ +	1	60	Died on second day.
VI	4 5	+ −	5	80	Survived.
VII	2 3 5	+ + −	2 4	80 90	Survived.
VIII	1	−	1 7	60 40	Died on eighth day.
IX	2 3 4 5	+ + + −	1 7 17 38	100 105 120 120	Survived.
X	28	−	2 5 19 28 80	100 100 100 100 100	Survived.
XI	3 7 8 22	+ + + −	6 18 26	100 120 120	Survived.
XII	1 8	+ −	2 5 7	120 120 120	Survived.

CASE X.—Mrs. M.'s first three pregnancies had resulted in normal children. The fourth child, born on November 1, 1946, was jaundiced and had erythroblastic anæmia. During the first twenty-eight days of life it was given four transfusions of group O Rh-negative blood. The infant's red cells examined on the twenty-eighth day after birth were group O Rh-negative. On December 17 similar results were obtained. The Coombs test produced negative results on both occasions. The mother's blood was found to be of group O Rh′ and to contain complete anti-Rh_o (anti-D) agglutinins.

CASE XI.—Mrs. H.'s first child was normal at birth, but the second pregnancy resulted on December 11, 1946, in the birth of a baby which became jaundiced and anæmic within eight hours. The result of the Coombs test on the infant's cells remained positive for eight days, and during this time the cells were group O Rh′. When the cells were last tested on January 3, 1947, the reaction with anti-Rh′ (anti-C) serum was extremely weak. The mother's blood group was O Rh′ and her serum contained incomplete anti-Rh_o (anti-D) agglutinins.

A phenomenon similar to that described in Cases IX, X and XI was noted during the routine investigation of Case XII ten days after the infant's birth. Cells were then examined daily until the infant was removed from hospital.

CASE XII.—Mrs. P.'s first eight pregnancies had resulted in the birth of normal children, but the ninth child born on December 27, 1946, was jaundiced and anæmic. The Coombs test produced a positive result on December 27, 1946, but a negative result on January 3, 1947, and on subsequent occasions. The infant's red cells were of group A Rh_o from birth until January 6, 1947. On January 3 and January 4 the reactions with B grouping serum and anti-Rh_o (anti-D) serum were very weak. From January 6 to January 10 the red cells were tested daily and were group O Rh-negative. The mother was of blood group A Rh-negative and her serum contained incomplete anti-Rh_o (anti-D) agglutinins.

TABLE III.

In-vitro Survival Time in Days of Sensitivity of Infants' Cells.

Case Number.	Days After Birth.			
	1	2	3	4
I ..	—	3	—	—
III ..	1	—	—	—
IV ..	5	3[1]	2[1]	5
V ..	6	5[1]	—	—
VI ..	—	—	—	5
VII ..	—	3	3	—
IX ..	—	4	3	2

[1] Insufficient cells to continue until a negative response to the Coombs test was obtained.

Discussion.

In all twelve instances the infants were undoubtedly suffering from hæmolytic disease of the newborn, as judged by their clinical appearance, the hæmatological investigations and the finding of anti-Rh agglutinins in the mother's serum. The positive result obtained with the Coombs test on cells from eleven of the infants was confirmatory evidence of the fact that antihuman globulin serum demonstrated *in vivo* isosensitization of the red cells. The one infant (Case VIII) whose red cells failed to react to the Coombs test was delivered by Cæsarean section and died seven days later. Autopsy revealed indisputable evidence of hæmolytic disease. The negative response to the Coombs test, therefore, could not be explained.

It would seem from these findings that the Coombs test, when it produces a positive result, is a reliable diagnostic test for hæmolytic disease of the newborn. On the other hand, a negative result does not exclude the possibility that an Rh incompatibility between mother and fœtus is a cause of the disease. When the result of the Coombs test is negative, the diagnosis must be made from the clinical condition of the child and from the results of serological and hæmatological examinations.

The investigation showed that the Coombs test could be used for diagnostic purposes for only a short time after the birth of the child. In the majority of the cases the Coombs test never produced positive results for more than four days. It was also shown that cells which gave a positive reaction on the initial testing became insensitive after a few days' storage in saline solution. The longest

period during which stored cells retained their sensitivity was six days, but in one instance the sensitivity was lost in twenty-four hours. The test must therefore be carried out as soon as possible after collection of the cells.

In the series investigated Wiener's conglutination test was found to be of no value, as no positive results were obtained. The albumin test was found to be similarly unsatisfactory, although in one instance (Case V) a doubtful positive result was obtained. These results are somewhat surprising, because both the conglutination and the albumin tests disclose the presence of Rh agglutinin on the surface of red cells when this union takes place *in vitro*.

It has been shown[3] that the Coombs test is about four times as sensitive as is Diamond's[4] albumin test in detecting the presence of Rh antibody on the surface of red cells. It is possible, therefore, that human serum and 25% albumin solution do not detect isosensitization *in vivo* if the cells are coated with only a small amount of antibody. However, this hypothesis is not compatible with the fact that some of the cells which fail to react with albumin and human serum also fail to react with anti-Rh_o (anti-D) serum, indicating that the receptor sites for this antibody had been completely or almost completely saturated with the incomplete anti-Rh_o (anti-D) agglutinins from the mother's serum. This raises the possibility that red cells coated *in vitro* with incomplete antibody from maternal serum differ from the infant's sensitized cells in that the former have absorbed an additional substance, "Y factor", from the maternal serum. It must be supposed that this Y factor is absent from fœtal serum. This hypothesis is illustrated as follows:

Maternal serum (incomplete antibody + Y factor) + Rh-positive red cells in 25% albumin solution → agglutination.
Sensitized infant's cells (Rh-positive cells + incomplete antibody) in 25% albumin solution → no agglutination.

If the Y factor exists and unites as suggested with the red cells, it cannot be removed by washing with saline solution because red cells treated with serum containing incomplete anti-Rh_o (anti-D) agglutinins and washed with saline solution will agglutinate if suspended in 25% albumin solution.

As has been mentioned earlier, the Rh subgroup of the infants' red cells as first determined in Cases IX, X and XI must obviously have been false. This phenomenon was undoubtedly due to the saturation of the Rh receptors of the infants' erythrocytes by the maternal incomplete anti-Rh_o (anti-D) agglutinins. During the period that the infants' blood appeared to be Rh-negative, it is obvious that the infants' own red cells were absent from the circulation and that only transfused Rh-negative cells were present.

Case XII is somewhat similar to these three cases, because the infant's own red cells disappeared from the circulation after a short time. It differs, however, in that the true blood group was apparent at the outset, although the Coombs test produced a positive result. In this case, as in that described by Cathie,[5] further evidence of the disappearance of the child's own red cells was obtained when the circulating blood, at first of group A, was found to be of group O after three transfusions of group O Rh-negative blood. The value of the Coombs test in drawing attention to these false groupings has been discussed by Cappell,[6] and Cathie[5] has shown that the true group of the child's red cells can be determined by examination of marrow cells. These false blood group findings are important from the therapeutic viewpoint, because a child known to be surviving on transfused red cells should not be considered to have recovered from the effects of hæmolytic disease until its own erythrocytes reappear and the red cell count is maintained at a normal level.

Summary.

The Coombs test, when performed within a few days of the infant's birth on freshly collected red cells, was found to be a reliable test in aiding the diagnosis of hæmolytic disease of the newborn. It is specific when a positive result is obtained, but when the result is negative does not exclude a blood group incompatibility between mother and fœtus as the ætiological agent of the disease.

Wiener's conglutination test and a similar test performed with 25% albumin solution were of no value for detecting the presence of Rh antibody on the surface of infants' red cells in the twelve cases investigated. The Coombs test aided the detection of false Rh groups of infants shortly after birth. The therapeutic significance of these false groups is discussed.

Acknowledgements.

The writer wishes to acknowledge the assistance given by the staff of the hospitals which cooperated in this investigation.

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TUBERCULOSIS OF HIP AND SPINE: A SHORT SURVEY OF CASES.

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THIS short survey is to give a comparison of results achieved in this hospital over the years from 1930 to 1946 in the treatment of tuberculosis of the hip and spine in children whose ages ranged from one to fifteen years.

In all, 132 cases are reviewed, 67 of tuberculous hips and 65 of tuberculous spine. All were proven cases of tuberculosis as determined by the following criteria: (i) the serial X-ray appearances at intervals of approximately six months throughout the period of illness; (ii) the duration of the illness; (iii) a positive reaction to the Mantoux test. These three features were reinforced by evidence such as positive results on culture of material obtained by gastric lavage, the obtaining of a culture of *Mycobacterium tuberculosis* from abscess pus, *et cetera*.

Tuberculosis of the Hip.

Two main methods were used in the treatment of tuberculous hips. One was conservative, immobilization only being undertaken throughout the whole period of illness; out of 67 patients, 47 were thus treated (group A). The other method was immobilization coupled later with some form of arthrodesis; 20 patients in all were so treated (group B). The following statement gives the average stay in hospital of all patients discharged and the end results in the two groups.

In group A treatment was by immobilization alone, and the average stay in hospital was four and a half years. The end-results were as follows: (*a*) bony ankylosis, radiologically complete at the end of an average of four years, 28 cases; (*b*) quiescent or fibrous ankylosis, 8 cases; (*c*) amputation through the hip joint, one case; (*d*) deaths, three cases; (*e*) condition at present active and patient under observation, seven cases.

In group B treatment was by immobilization and arthrodesis, and the average stay in hospital was four years. The end-results were as follows: (*a*) bony ankylosis, 10 cases (first evidence in an average of twelve months,

ankylosis complete in an average of two years after arthrodesis); (*b*) lesion quiescent but failure of graft to take, four cases; (*c*) death (some months later from peritonitis), one case; (*d*) patient under observation (in all cases graft has taken and bony ankylosis is commencing), five cases.

It must be pointed out in regard to group B, that although the average period spent in hospital was four years, included in this group are those patients who had a prolonged stay in hospital owing to failure to achieve bony ankylosis by immobilization alone.

In a series of 20 cases, arthrodesis of the hip joint was undertaken in the following cases: (i) in those cases (nine) in which treatment at first was conservative, and in which during this time the usual sequence of bone focus, panarthritis and quiescence with increasing calcification, was observed; arthrodesis was then performed as an alternative to the ambulant phase of treatment; (ii) in those cases (seven) in which a long trial of conservative treatment was given, and although the tuberculous process was quiescent, natural ankylosis appeared likely to be a lengthy process; (iii) in those cases (four) in which although the patient had been ambulatory for some years (average, three) he had a movable joint; arthrodesis was undertaken to convert an unsound fibrous ankylosis into a sound bony ankylosis, any form of external splinting thus being rendered unnecessary.

The types of arthrodesis used were as follows: intra-articular arthrodesis, one case; intraarticular and extra-articular arthrodesis, three cases; extraarticular arthrodesis, 16 cases. The youngest patient was aged ten years at the time of operation.

Tuberculosis of the Spine.

In the treatment of tuberculous spine, again the method was either conservative treatment by immobilization alone, or immobilization and some form of internal fixation later. In the first group (A), 50 patients were thus treated; in the second group (B), there were 15 patients. The following statement gives the average total period of stay in hospital of all discharged patients, and the end-results obtained in the two groups.

In group A treatment was by immobilization alone, and the average total stay in hospital was five years. The end-results were as follows: (*a*) bony ankylosis radiologically complete at the end of an average of four and a quarter years, (i) without deformity, 19 cases. (ii) with deformity, 10 cases; (*b*) process quiescent, but bony ankylosis not complete, seven cases; (*c*) deaths, seven cases; (*d*) lesion at present active and patient under observation, seven cases.

In group B treatment was by immobilization and internal fixation, and the average stay in hospital was four and a half years. The end-results were as follows: (*a*) bony ankylosis, first evident radiologically in an average of six months after fixation, and complete in an average of eighteen months after fixation, (i) without deformity, eight cases, (ii) with deformity, four cases; (*b*) lesion quiescent, but failure of graft to take, two cases; (*c*) under observation, one patient (graft taken—bony fusion commencing).

Again it was observed that in group B were included eight patients who had been given a long trial of conservative treatment only, which had failed to produce natural bony fusion.

In the series of 15 cases, the indications for the internal fixation of the diseased vertebra were as follows: (i) five cases in which treatment was conservative until the lesion was quiescent, and then fixation was accomplished to shorten the stay in hospital by promoting bony fusion; (ii) eight cases, mentioned above, in which the condition was quiescent, but in which natural fusion seemed unlikely; (iii) two cases in which, after quiescence of the lesion for some years, the patient being ambulatory with external splinting, there was a recurrence of activity in the original lesion; these patients had internal splinting performed when quiescence was again achieved.

The types of internal fixation used were as follows: (i) Albee graft, 14 cases; (ii) modified Hibbs's graft, one case. The youngest patient was aged nine and a half years at the time of operation.

No patients with cervical spinal caries were subjected to operation. Nine with lumbar and six with thoracic spinal caries were subjected to internal fixation; the two failures were in cases of thoracic spinal caries.

Summary.

1. In a series of 47 patients with tuberculous hips treated by immobilization alone, 28 achieved complete bony ankylosis. Of 20 patients treated by immobilization and arthrodesis combined (including patients who had had an unsuccessful trial of conservative treatment alone), 10 achieved complete bony ankylosis. In addition, in a further five cases in this group of 20, arthrodesis has been performed and bony ankylosis is commencing as determined radiologically.

2. In a series of 50 patients with tuberculous spines, treated by immobilization alone, 29 achieved complete bony fusion. Of 15 patients treated by immobilization and internal fixation (again including patients who had had an unsuccessful trial of conservative treatment alone), 12 achieved complete bony fusion. In addition, one more patient in this group has had internal fixation performed, and again bony fusion is developing.

Acknowledgements.

My thanks are due to Dr. J. B. Colquhoun and Dr. E. E. Price for permision to publish this report.

RECURRENT DISLOCATION OF THE SHOULDER.

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ALTHOUGH recurrence is an uncommon complication of the ordinary dislocated shoulder, a superlative number of curative operations have been put forward, and we have the choice of several causes and of a much larger variety of ingenious operations. The selected method of treatment depends upon which of these appeals to the surgeon about to deal with the problem. In 1885 the first operation for plication of the capsule was performed, and this method of treatment prevailed for many years, although

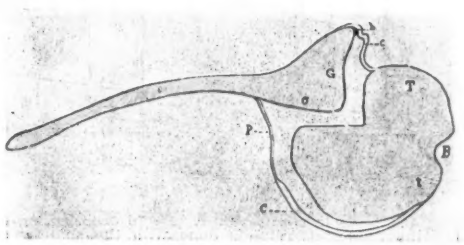

FIGURE I.

Broca and Hartman's illustration reproduced in "Traité de chirurgie" by Duplay and Reclus, 1885. The posterior gutter on the humeral head and the subperiosteal separation of the capsule at the glenoid rim are shown; but Bankhart was the first surgeon to suggest reattaching this separation (in 1923).

the capsule has always been described as a lax structure in its normal state. This operation has probably been the most frequently used and has enabled many of the early operators to observe special pathological features of the lesion (see Figure I). Then there were such operations as Clairmont-Ehrlich's, which had a vogue; Nikola's—a very useful method; the use of *fascia lata* slings; the forming of a bony buttress in front of the glenoid rim (Speed); elongation of the coracoid process, which was described by Oudard in 1924 and is (or was, until 1938 at least) the most practised operation in France. Cures have followed any of these operations and also there were failures. A study of these poor results is more useful

than a study of the successes. The Nikola operation sometimes fails after a few years, especially in the treatment of manual workers. The popular Bankhart operation, which constricts the capsule by reattaching the subperiosteal separation of the *labrum glenoidale*, is being widely practised; but this cause of recurrent dislocation

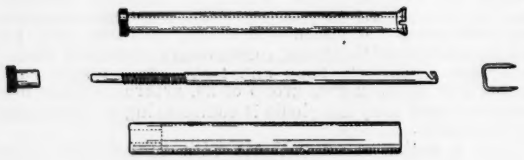

FIGURE II.
The staple holder and extractor.

is not present in every instance, and the following is an example:

A male patient, aged seventeen years (an ice carrier), had the Nicola operation performed by me on December 18, 1940. Four years later he had a recurrence, and he has had five recurrences since then. At the second operation on October 23, 1946, there was no detachment of the *labrum glenoidale* and capsule at the anterior or inferior margins of the glenoid rim. There was a large herniation of the capsule in front of the glenoid, about the size of the *caput humeri*, and this was reefed and tacked down through its folds to the neck of the scapula; six weeks later I elongated the coracoid process.

I have performed Oudard's operation on three other patients with no recurrences after periods varying from five to eight years. A bone graft about two or three inches long is inserted into the split coracoid process and into the conjoined tendons of the coraco-brachialis and the short head of the biceps muscles. The graft may fail to unite. The method is not likely to control the subglenoid dislocations, but it can hardly fail to prevent subcoracoid dislocations. Those surgeons who performed so often the old operation of capsulorrhaphy seldom failed to notice that a familiar feature was a vertical defect or gutter on the back of the humeral head. This is described in Helferich's classic text-book ("On Fractures and Dislocations", 1890) and by Duplay and Reclus (*"Traité de chirurgie"*, 1885). These authors regarded this posterior sector or indentation, which was compared to a slice of an orange or melon, as an important cause of recurrences. When this notch in the humeral head is engaged in the anterior rim of the glenoid during external rotation and abduction, the leverage permits stretching of the capsule. This facilitates redislocation within the dilated capsule, especially if the *labrum glenoidale* is raised from the bony rim. Modern French surgical works, such as *"Traité de chirurgie orthopédique"* by Ombrédanne and Mathieu (1937) pay profound attention to the changes in the *caput humeri*. Watson-Jones, in the latest edition of his book, has also described with detail the importance of the humeral groove or gutter and his account, with splendid illustrations, of the cause and treatment of recurrent dislocations could hardly be improved. The groove can sometimes be shown in the skiagram only on internal rotation of the humerus, but in other cases it is obvious as in Figure IX. The notch in this case was the result of a localized compression fracture, because the dislocation was caused by a powerful electric shock. In other cases the proclivity to dislocation becomes greater because of attrition between the head and bony rim after a series of redislocations; and it will be admitted that once this groove develops, dislocations can occur very easily. Most surgeons report that sometimes this groove is not present, as in the following case:

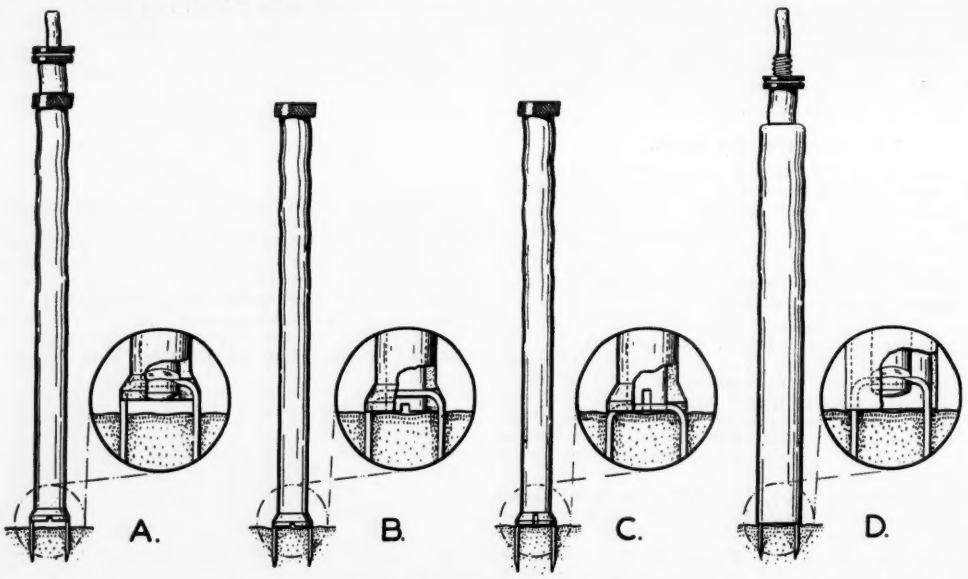

FIGURE III.
A: Staple in staple holder. B: In deep setting of the cylinder. C: The central slotted rod has been removed; the final impacting is done with the shallow setting on the end of the cylinder. D: The staple can be extracted by inserting the slotted rod into the larger cylinder.

Figure XI is the skiagram of a patient who had many dislocations of the shoulder, sometimes three a day, over a short period of six months only. I found at operation a separation of the *labrum glenoidale* and adjacent capsule at the inferior (sub-glenoid) margin and nearer to the posterior than to the anterior edge of the glenoid bony cavity. There was also a good deal of *osteochondritis dissecans* with tiny loose bodies; other particles were undetached and pedunculated. The glenoid rim was worn down; but no groove in the *caput humeri* existed.

Duplay and Reclus (1885) agreed with Broca and Hartman (Figure I) that the recurrent dislocation may be characterized by a large subperiosteal separation of the capsule in front of the glenoid rim. In these circumstances, the large separation easily recurs if the patient uses the limb too soon after the first dislocation. Duplay and Reclus state that at most capsulorrhaphy operations

ILLUSTRATIONS TO THE ARTICLE BY DR. ELIZABETH HIMMELHOCH, DR. OLIVER LATHAM AND DR. C. G. McDONALD.

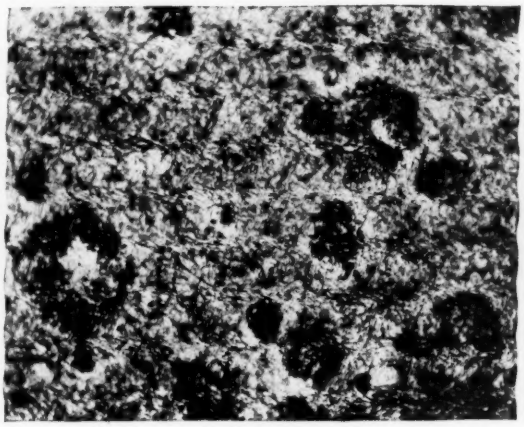

FIGURE I.

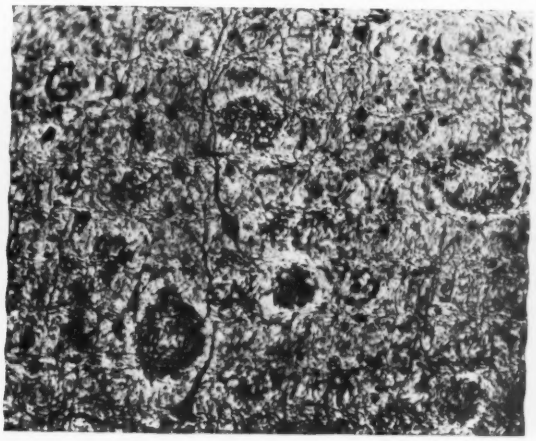

FIGURE II.

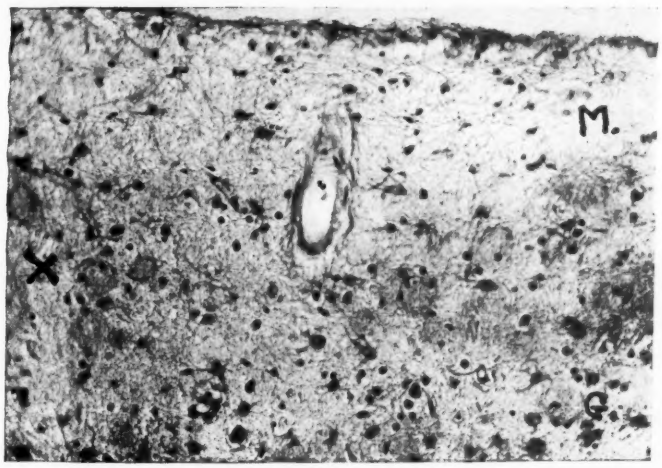

FIGURE III.

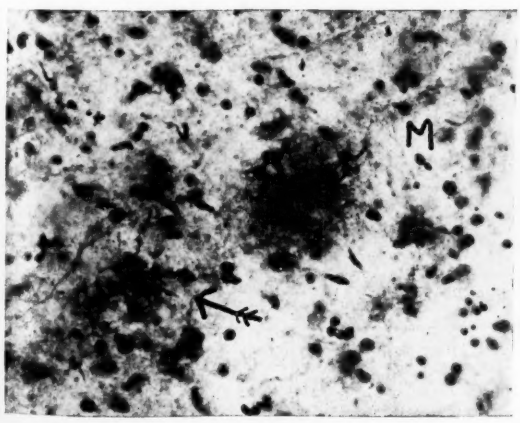

FIGURE IV.

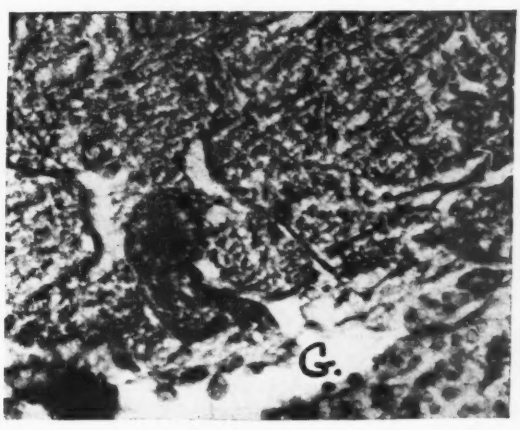

FIGURE V.

ILLUSTRATIONS TO THE ARTICLE BY DR. THOMAS KING.

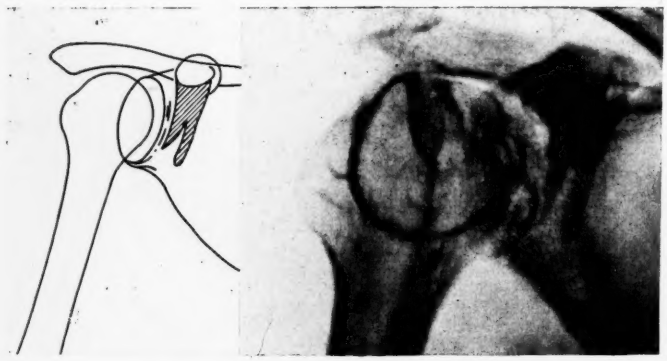

FIGURE VII.—Patient had two suspension operations, one when aged fifteen years and a second when aged seventeen. Third operation on April 30, 1941 (aged twenty-two), Nikola's operation and Oudard's operation (lengthening of coracoid process by bone graft). Examination, October 18, 1946; no recurrence; slight limitation of full abduction.

FIGURE VIII.—Axillary view of same patient as in Figure VII; holes in acromion are from earlier operations; base of graft in the split coracoid process is well seen.

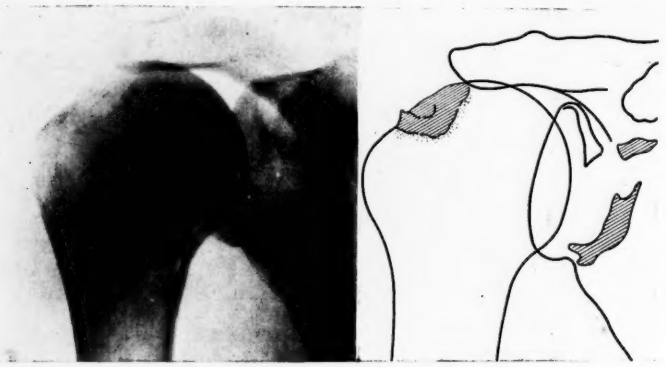

FIGURE IX.—This patient had a recent dislocation caused by a 250 volt electric shock on August 30, 1946. The anterior rim of the glenoid has been displaced medially; there is a compression fracture on the posterior aspect of the humeral head. The dislocation recurred twice, on December 25, 1946, and January 26, 1947. Bankhart's lesion was found at operation and a staple was used for fixation.

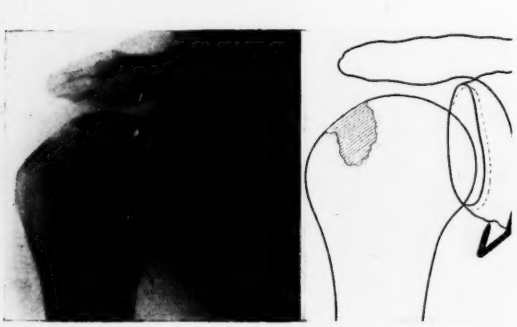

FIGURE X.—Primary dislocation of four weeks' duration reduced after arthrotomy; stretched capsule reefed and tacked down to the anterior glenoid rim by a staple; note the posterior indentation of humeral head. At operation there was no rent in the capsule, which was herniated into the subcoracoid region.

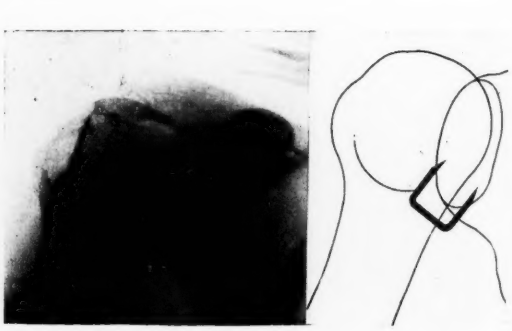

FIGURE XI.—Bankhart's lesion was present near the postero-inferior margin of the glenoid rim in this patient, who had recurring anterior dislocations for six months. Note the posterior position of the staple; also the thickness of the capsule which has been engaged, which gives the incorrect impression that the staple has not been driven in far enough; no posterior gutter in humeral head.

the capsule has not been found torn but intact, although enlarged by this periosteal capsular separation in front; but Bankhart was the first surgeon to deal with this detachment of the capsule by reattaching it to the bony rim and to state that it was present in most cases of recurrent dislocation with few exceptions. We are all grateful to him for the advance in the treatment that he has promoted; but it remains to be seen whether this lesion is present in nearly all cases. As many surgeons are performing this operation at the present time, they should come forward and describe their experiences, especially their failures to find this lesion, which could hardly be overlooked if present. When the capsule and *labrum glenoidale* are detached (the Bankhart lesion), the globular humeral head is free to revolve in an enlarged cavity; and if the groove on the *caput humeri* engages the bony rim, a redislocation easily occurs into the expanded capsular sac. It hardly seems possible that the *caput humeri*, which has two or three times the circumference of the glenoid cavity, could pass underneath the detached *labrum glenoidale* and capsule, because the length of the glenoid fossa in a horizontal section including its fibrocartilaginous rim is less than half that of the caput, and in a vertical section, about two-thirds. The usual state of affairs is that shown in Figure VI. In many instances, when the dislocation is complete, the patient is able to push the head back again; in slight cases in which the head is only subluxated—and this subluxation recurs too often — the patient complains of the inconvenience. The Bankhart operation, in suitable cases, is generally effective, because it causes a general constriction of the capsule. When the *labrum glenoidale* and the capsule are tacked down by the encircling silk-worm gut sutures through the bony glenoid rim and around the *labrum glenoidale* and capsule beyond the latter structure, and when the capsule opening has been plicated, the *caput humeri* rotates in a more circumscribed joint cavity. Unfortunately, it is only too obvious that after operation a weakness caused by the frequent pre-operative bulging of the capsule from past dislocations may exist in that sector of the capsule near the reattached *labrum glenoidale*.

FIGURE IV.

The *labrum glenoidale* and stripped up capsule are tacked down onto the scapular neck by the staple. The staple can be used also for tacking down the pleated or reefed capsule when a stretched or torn capsule is the cause of recurrent dislocation and Bankhart's lesion is not present.

Bankhart makes the following statement:

> Recurrent dislocation has nothing whatever to do with ordinary traumatic dislocation. It is from the first an entirely different injury, and it is produced in an entirely different manner. The reason why the dislocation recurs after reduction is that, whereas a rent in the fibrous capsule heals readily and soundly, there is no tendency whatever for the detached glenoid ligament to reattach itself to the bone.

Watson-Jones and other authorities, including those in the books to which I have already referred, are in agreement with the above positive statement. It is difficult to understand how it is possible to be sure that a rent or vertical tear always occurs in a recent dislocation, and not the bulging of the capsule beyond the stripped up *labrum glenoidale* and capsule that is supposed to characterize the recurrent dislocation, because (with the exception of a rare post-mortem examination for a recent injury or at open operation for an unreduced dislocation of a few weeks' duration) there is no opportunity to prove this. If the result of a recent (primary) dislocation was a rent of the capsule, the large head of the humerus would have to pass through a very large opening in the capsule (unless stretched before the tear), because reduction is always easy, and irreducibility is a rarity.

Figure X is the skiagram of a patient after an operation for an unreduced dislocation of four weeks' duration, which could not be relieved by manipulation. Operation showed that the essential factor that prevented reduction by manipulation was the presence of adhesions between the stretched capsule over the dislocated head and the muscles in the subcoracoid region, and not a vertical tear in the capsule strangling the anatomical neck of the humerus. It may be stated that the tear, which is so beautifully illustrated in many books, was veiled by the scar tissue in which the head was embedded, and that it was impossible to distinguish capsule from cicatrical tissue. But when the capsule was incised and the interior of the joint was carefully inspected for any tear, none was found. When the head was levered into the glenoid cavity the capsule was very slack indeed, and it was reefed and tacked down onto the anterior rim of the glenoid and the neck of the scapula by a staple.

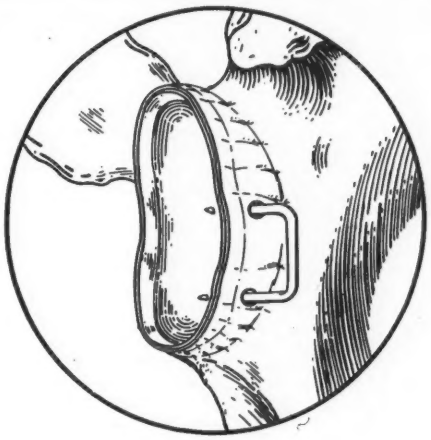

FIGURE V.

The staple has been wrongly directed into the glenoid cavity; is easily removed with the staple extractor.

I thought that an anterior Bankhart lesion existed, but could not be certain because of the inflammatory reaction in front of the glenoid rim after four weeks of dislocation; however, I am certain that the dislocated head was inside the herniated capsule. As a result of this experience, I am inclined to think that there may be no essential difference between the cause of a recent and of a recurring dislocation, except that in the former the detached capsule and *labrum glenoidale* (Bankhart lesion) heal naturally, and in the latter, Bankhart's operation is required. Of course, this is hard to prove. We also have to consider those cases in which the cause of recurrent dislocation is not the Bankhart lesion, but something else—for example, stretched or torn capsule, fracture of glenoid rim, *et cetera*. With regard to the latter, it is interesting to note how often in a recent dislocation (primary) the glenoid rim is fractured and the dislodged fragments remain permanently displaced in the subcoracoid region. A study of the control skiagrams after reduction of the ordinary acute dislocations shows that this fracture takes place frequently, but is rarely observed and recorded in the X-ray report. It will be interesting to learn how many of these patients have recurrences, because this

fracture of necessity implies that the *labrum glenoidale* is detached, as in the typical Bankhart lesion.

Figure VI, number 2, shows a posterior lesion in an anterior dislocation of the shoulder, and represents the pathological anatomy which I thought was present at a post-mortem examination on a subject with a recent anterior unreduced dislocation, but with this reservation —that my observations were obscured by the inflammatory reaction. I do not think that I am in the position to propose that if no anterior lesion is found, an operation should be performed for exploration of the posterior portion of the *labrum glenoidale*, and that this should be carried out some weeks later—that is, when the anterior wound has healed. Most surgeons would, in these circumstances, proceed to perform the Nikola operation; but in addition I should consider lengthening the coracoid process after performing capsulorrhaphy.

FIGURE VI.

1. Anterior dislocation caused by a subperiosteal anterior separation of the *labrum glenoidale* and capsule; note notch on back of humerus where it engages the anterior lip of the glenoid rim. 2. Anterior dislocation caused by posterior tearing of capsule and *labrum glenoidale* (see text). 3. Demonstration at operation of Bankhart lesion after arthrotomy. 4. Fixation of *labrum glenoidale* and capsule by the staple; plication of opening in capsule.

I have treated only one recent posterior dislocation and no recurrent posterior dislocation.

For a number of years in this country A. V. Meehan (Brisbane) has stimulated the interest of surgeons who have to deal with this problem, and he has a good experience of Bankhart's operation, which he has performed successfully on a number of patients. He has overcome the difficult suturing of the detached capsular segment and section of the fibrous *labrum glenoidale*. Dental drills and other ingenious instruments have been used for drilling the bone and inserting the sutures; but even these methods are time-consuming and irritating. The insertion of a staple half an inch wide and three-quarters of an inch long was suggested, I believe, by surgeons in Johannesburg, and is a complete and satisfactory solution of the problem (Max Page). After demonstration of the separated rim of the *labrum glenoidale* by opening of the capsule about half an inch from the *labrum glenoidale* and insertion of a hook or other instrument (see Figure VI, Number 3), the operation has been virtually completed. The eroded bone of the glenoid rim and the neck of the scapula—osteochondritis—is roughened by a quarter-inch chisel. This ensures that the detached part of the *labrum glenoidale* and capsule (especially the latter) will become firmly adherent when the staple is driven into the bone just beyond the edge of the *labrum glenoidale*. The capsule is separated by a synovia-lined furrow (sulcus) from the outer surface of the *labrum glenoidale*, but is attached to the outer edge of the latter near its base. The normal *labrum glenoidale* base is firmly attached to the bone. The staple is held in the holder, and it is not difficult to insert it at the correct angle so that it will not penetrate the joint —that is, if we do not feel obliged to follow the "no-touch" technique. Those who permit themselves to be absolved from this ritual have the advantage that they may insert the index finger behind the staple held in the staple holder. They can then feel with the index finger the bony edge of the glenoid and the scapular neck. The assistant can hook back the edge of the incised capsule (see Figure VI, Number 3) and the operator can feel and see the direction of the staple held in the instrument, and be sure that it does not penetrate the joint. The surgeon has one finger of the left hand in the wound, and the right hand is holding the staple holder (eight inches long), and the latter also acts as a retractor. The assistant now gently taps the edge of the staple holder with a hammer, whilst the surgeon with his left hand feels the staple being driven into the bone. The expanded capsule beyond the *labrum glenoidale* is so thick that about a quarter of an inch of the staple legs is not driven into the bone (skiagram and drawing, Figure XI). When the staple has been driven in about half-way, the centre rod of the holder is removed. The outer cylinder is then rotated 90° so that the remainder of the staple can be engaged by the second groove of the instrument, which is not so deep as the "holding" groove, so that impaction is allowed. The suturing of the arthrotomy opening enables the surgeon to insert a pleat in the stretched capsule, but "more than one surgeon has commented on the difficulty of raising a satisfactory fold when doing a plication for recurrent dislocation" (Bankhart). It is absolutely unnecessary to divide the coracoid process as is required in the original Bankhart technique for suturing of the uplifted portion of the *labrum glenoidale* and capsule by silk-worm gut through drill holes; nor is the *caput humeri* a hindrance; but the subscapularis tendon requires to be divided. The full course of penicillin is administered as for a compound fracture and also sulphamezarine. Physical therapy may begin after four weeks.

Conclusion.

The object of this note is to draw attention to the ease and effectiveness of a staple and staple-holder in performing the Bankhart operation; of course, there is no limit to the variety of instruments that could be thought of and used by others. This is a slender instrument and does not obstruct the view. The larger tube is for extracting a staple that has been introduced incorrectly. It cannot be used if the staple has been completely driven in. Therefore, if the staple has been hammered in one-half to two-thirds of an inch—that is, when about one-eighth of an inch is still projecting from the capsule—the joint should be inspected and bearings taken, and if necessary the staple can then be extracted. If the staple has been driven home, the staple extractor is difficult to use unless a hook is placed under the staple, which is then slightly withdrawn. This instrument for holding and pulling out the staple is based on the same principle as the nail extractor described about ten years ago for removal of Smith-Petersen nails. The staple is made from a stainless steel Kirschner wire. C. B. McPherson, of 31, Spring Street, Melbourne, can supply the instrument and staples.

Reports of Cases.

ALZHEIMER'S DISEASE COMPLICATED BY A TERMINAL SALMONELLA INFECTION.

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Sydney.

THE following case merits description for two reasons: first, a patient suffering from Alzheimer's disease manifested at autopsy the characteristic lesions of that condition in the cerebellum as well as in the cerebrum; and secondly, the disease was complicated by a terminal septicæmia due to a Salmonella organism.

Clinical Record.

The patient, A.M.G., a married woman, aged sixty-nine years, was admitted to the Royal Prince Alfred Hospital, Sydney, on June 23, 1945. She was semi-comatose, picked at the bed-clothes and moaned frequently. The trunk of her emaciated body and all her limbs were rigid, but periodically she raised both arms and held them above her head. Sometimes her lower jaw dropped so that her tongue could easily be seen lying on the floor of her mouth.

As the patient made no response to questioning, a history was obtained from her husband and her son. She had been in good health up to the time of the menopause sixteen or seventeen years before. Then, however, her hands became tremulous, and she complained of slowly progressive stiffness of all her fingers and inability to coordinate them in fine movements. Thus she found that she could no longer play the piano. The left hand was affected earlier than the right. These changes gradually advanced. About five years prior to her admission to hospital she began to exhibit incoordination in her gait and inability to express her thoughts or to speak with clarity. Her memory failed and her muscular control decreased. Although voluntary movements were so clumsily executed that she could not dress herself, she could be left alone and her habits remained clean. No gross mental defect was present; she understood the conversation of her relations, was herself mentally accessible and at times was upset at her inability to speak clearly and to find the appropriate words with which to express her thoughts. This great physical and minor mental deterioration had been greatly in evidence in the three months prior to her admission to hospital. There was no family history of any mental or physical disorder. On June 20, 1945, she became suddenly listless and drowsy and her husband noticed that her whole frame became "rigid". She was conscious again on the next day, but on June 22 she again became drowsy and rigid and speechless, and arrangements were made for her admission to hospital. Her temperature on her admission to hospital was 99·4° F. and her pulse rate was 76 per minute; but thereafter till her death five weeks later she had a high fever and tachycardia, the temperature reaching 104° F. two days after her admission to hospital, and seldom falling below 101° F.

Physical examination revealed no abnormality in the alimentary, cardio-vascular, respiratory, hæmatopoietic, glandular or genito-urinary systems. Thus the heart was not enlarged, no murmurs or irregularity were detected, the radial arteries were not palpable, and the blood pressure readings (140 millimetres of mercury, systolic, and 90 millimetres, diastolic) were within the normal range for a woman of her age. The urine contained no abnormal constituents. Only in the nervous system were abnormalities detected on examination. The fundus of each eye had a normal appearance when she was examined several days after her admission to hospital, but shortly afterwards the left eyeball was directed medially and the right rotated upwards. The pupils were equal, central, circular and moderately dilated. She resisted examination of her eyes by pronounced contraction of each orbicularis muscle. No deviation from normal was detected in the other cranial nerves. The power of the limbs and her sensory functions could not be tested accurately, but no obvious paresis was present, and no failure to respond to pin-prick. The upper and lower limbs were spastic and there was considerable rigidity of the trunk muscles which made the performance of lumbar puncture difficult. The whole body was in a state of extensive rigidity, and later mild opisthotonus appeared. The wrist, elbow and supinator jerks were present, the knee and ankle jerks were increased, and patellar and ankle clonus was elicited. The plantar response was extensor in type on each side. Bilateral righting reflexes were also present. Thus tonic flexion of either upper limb was induced when the head was turned to the opposite side. The patient had lost control of her organic reflexes and was passing urine freely into the bed.

Lumbar puncture was performed on the day of her admission to hospital and was repeated four days later. On each occasion the cerebro-spinal fluid pressure was low, varying between 35 and 50 millilitres. The Queckenstedt test produced a positive reaction. On examination of the cerebro-spinal fluid no increase was detected in the number of white cells, and the protein content was less than 20 milligrammes *per centum*. The Wassermann test and the Kline precipitation test performed on this fluid both failed to produce a reaction. Cisternal puncture was performed on June 30 under "Pentothal" anæsthesia, when five millilitres of fluid were removed. The cisternal pressure was 50 millimetres and the pressure of the fluid at lumbar puncture performed at the same time was 80 millimetres, the head of the patient being somewhat higher than the lumbar region of the back. The cisternal fluid contained less than 20 milligrammes of protein, and the globulin content was not increased. The cell content was only three lymphocytes per cubic millimetre.

Other investigations were carried out to shed light on her condition. A blood count revealed a hæmoglobin value of 87% (12·6 grammes of hæmoglobin *per centum*). A neutrophile leucocytosis was present, the total white cells numbering 16,400 per cubic millimetre; 94% were neutrophile cells (young forms 6%, band forms 30% and segmented cells 58%). The blood sedimentation rate was 15 millimetres in the first hour. The urea content of the blood was estimated at 39 milligrammes *per centum*, the blood sugar level (at 2.15 p.m.) was 124 milligrammes *per centum*, and the blood calcium content was 15·6 milligrammes *per centum*. Examination of the pelvis by a gynæcologist, performed because of the obscurity of the cause of her prolonged pyrexia, revealed no abnormality of the uterus or adnexa.

Throughout her stay in hospital the patient continued to have a high intermittent temperature, which varied between 104·2° and 97° F., the apyrexial days being few in number. Her general condition alternated between one of stupor and one of extreme noisiness. She was always irrational and spoke no intelligible word. Her noisiness increased towards her last days, death occurring on July 30. Meanwhile she had been treated with 2,000,000 units of penicillin without appreciable effect on her condition. On July 4, blood had been taken for cultural examination. The examination revealed the presence of what ultimately proved to be *Bacterium cholera-suis* (variety Kunzendorf). This organism was again found in a culture from the blood made on July 11. It seems clear that this septicæmic condition was the cause of the patient's fever and of the terminal infection that brought about her death.

Post-Mortem Examination.

An autopsy was performed on July 30.

The body was that of an emaciated woman. The heart was small and the valve cusps were normal. The myocardium was brown. The coronary arteries and aorta manifested only slight atheromatous lesions. Apart from these changes nothing noteworthy was discovered in the thorax or abdomen. The brain was very small, weighing only 960 grammes. The cerebral gyri appeared wasted and shrunken. The whole brain was characterized by a

uniform atrophy involving both cerebrum and cerebellum. This was an important finding, as in nearly all cases of Alzheimer's disease the cerebellum is comparatively normal both in size and in weight. In the case of healthy brains the weight is divided between cerebrum, cerebellum and pons and medulla in the proportion of 87 : 11 : 2. In this instance the cerebrum made up 86% of the total weight, the cerebellum 12% and the pons and medulla 2%.

The cisterns at the base of the brain were distended with cerebro-spinal fluid and outside the tonsil of the cerebellum on the right side was a pocket measuring 1·5 centimetres, filled with cerebro-spinal fluid. In the vessels at the base of the brain only slight atheroma was found.

The histological findings in the central nervous system were of great interest. Examination of sections of the motor cortex stained with hæmotoxylin and eosin revealed a great increase in adventitial cells, diminution and degeneration of the neurones and pronounced gliosis. Throughout the cortex, bluish, hazy areas were noted. On being stained with Mallory's phosphotungstic hæmatoxylin and with Penfield-Cohn silver stain, these areas were found to be argentophile plaques. They were seen to have numerous microglia actually invading and forming part of them, while condensations of fibrous glia were present on the periphery of the plaques. With silver stain the glial network was shown to be greatly hypertrophied in the brain tissue between the plaques. In many of the neurones, examination with the high power of the microscope revealed neurofibrillary degeneration; the neurofibrils, instead of running straight through the cells as fine lines, were condensed at the periphery of the cell in the form of thickened, irregular strands.

In the hippocampus were found changes similar to, but even more extensive than, those in the motor cortex. In both motor cortex and hippocampus the smaller blood vessels showed mild degenerative changes.

The cerebellum was also abnormal. Large numbers of Purkinje cells had disappeared, and about half the remainder were abnormal, showing all gradations of atrophy. The change was irregular in distribution, some folia appearing unaffected. The dentate nucleus and central white matter were normal. However, the point of great interest is that in the cortex were seen plaques which were essentially similar to those seen in the cerebrum, but on a smaller scale.

Examination of the mid-brain revealed very little departure from normal, apart from a slight degree of gliosis, which is normally present in the brain of a person of this age. The tracts of the brain stem and olive were normal. There was some variation in the size, shape and staining of the neurones of the medulla, and some had disappeared. The tracts of the spinal cord were well preserved.

Discussion.

A correct clinical diagnosis was not made in this case. One of us (C.G.McD.), under whose care the patient was admitted to hospital, made a provisional diagnosis of a lesion, possibly a tumour, causing pressure on the brain stem from without and possibly originating in the cerebellum. This opinion was based on certain manifestations (extensor rigidity, the presence of righting reflexes, extensor plantar response on both sides) which suggested a lesion causing decerebrate rigidity. It was believed, however, that the infection causing her rise in temperature had an extracerebral origin. The actual cause of the septicæmia (the Kunzendorf variety of *Bacterium cholera-suis*) was not discovered till the last days of her illness. Meanwhile we were assisted by a skilled neurosurgeon, who gave it as his opinion that she had a lesion of the brain stem and basal ganglia, but was at a loss to assign a cause. He suggested the possibility of degeneration and softening associated with cerebral atheroma. He thought the rise of temperature might be due to recent hæmorrhage or softening. A neurologist who also examined her suggested that she was suffering from chronic encephalitis, as he believed that the cerebrum was directly involved as well as the basal ganglia and brain stem.

The disease from which she was suffering was not suspected; this seems strange in retrospect, because the facts of the history should have brought to mind the likelihood that the patient was suffering from presenile dementia. However, judgement was clouded by the fever which characterized her last illness. The history of a long-standing and slowly progressive dementia commencing in middle life is usual in all degenerative lesions of the cerebrum. The final diagnosis of Alzheimer's disease rests, however, on the histological changes found in the brain on examination of sections. These are the presence of argentophile plaques with hypertrophy and hyperplasia of the intervening glia. In the neurones neurofibrillary degeneration occurs. These changes are typically most prominent in the cerebrum. In this case plaques were found in great numbers throughout the cerebral cortex, but were also present in the cerebellum—a most unusual event. There is frequently some concomitant vascular degeneration of the small blood vessels, which, however, is never sufficiently severe to account for the gross structural change in the brain tissue. In this case it was present in only mild degree.

The argentophile plaques, gliosis and neurofibrillary degeneration, which are supposedly pathognomonic of Alzheimer's disease, need not all be present. Further, plaques are occasionally observed in other diseases of the cerebrum, a few frequently being found in the pure vascular degenerative lesions, and they have also at times been found in the brains of young patients. With regard to the nature of the plaques, Weil states that physical and chemical changes, with loss of water, frequently occur in brains of the aged, and it is suggested that the plaques represent one of these changes—namely, a colloidal, chemical, precipitation reaction.

With regard to staining methods for examination of the brain it is of interest to note that the diagnosis of Alzheimer's disease was suggested in this case by the ordinary hæmatoxylin and eosin stained sections. It was also found that, while silver staining gave a good picture, equally good results were obtained with Mallory's phospho-tungstic hæmatoxylin and Mallory's triple stain.

In previous articles one of us (O.L.) has described in detail the argentophile preparations and the Mallory staining techniques. A recent improvement for Mallory's phospho-tungstic hæmatoxylin method is as follows. Place the paraffin section in lead chloride solution for ten minutes. Dip it in hot water. Cover the slide with a 0·25% solution of potassium permanganate for five minutes. Dip it in water, then place it in 1% oxalic acid solution for five minutes and once more dip it in water. Finally, stain it with phospho-tungstic hæmatoxylin at 37° C. for three hours.

This case was surprising, in that while the histological changes were of severe degree and were proof of long-standing disease, the patient's mental state had not advanced to severe dementia prior to the acute terminal illness.

A final word may be said in reference to the blood infection. The organism isolated from the blood was found to belong to the paratyphoid C group. It did not ferment arabinose and produced sulphuretted hydrogen. Slide agglutination was produced against paratyphoid C, O and H sera and against *Bacterium cholera-suis* (variety Kunzendorf). These results suggested that it was either paratyphoid C in group phase or *Bacterium cholera-suis* (monophasic). An endeavour was made to convert the organism to specific phase, but was unsuccessful. Immune sera were then prepared in rabbits and agglutinin absorption tests were also performed. Complete absorption occurred with O and H sera against *Bacterium cholera-suis* (monophasic, variety Kunzendorf). Unfortunately, at the time it was not known that O antigens of paratyphoid C and *Bacterium cholera-suis* differed slightly, and the O suspensions used were of paratyphoid C only. However, the fermentation reactions combined with the above results seem to justify the calling of the organism *Bacterium cholera-suis* (variety Kunzendorf). Another point is that it produced sulphuretted hydrogen, a characteristic of the monophasic (Kunzendorf) variety. It is interesting to note that the diphasic variety is said to be more invasive than the monophasic variety.

The source of the *Bacterium cholera-suis* in this case is unknown. It is an extremely rare pathogen in Australia. However, a terminal Salmonella infection is by no means uncommon amongst dements, although in this case the relatives were emphatic that the patient was clean in her habits.

Acknowledgements.

Dr. J. Armytage, of the Fairfax Institute of Pathology, Royal Prince Alfred Hospital, gave her help in the isolation of *Bacterium cholera-suis*. To the staff of the Department of Neuropathology of the University of Sydney, and to Mr. Woodward Smith and the staff of the medical artistry and photography unit of the University of Sydney we extend our thanks.

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Legends to Illustrations.

FIGURE I.—Part of cerebral cortex with innumerable argentophile plaques; von Braunmuhl's silver stain (× 200).

FIGURE II.—Cerebral cortex showing glial cells to the right of G and elsewhere. Note the neurones to right and below G, whose processes tend to pass through plaques and thus become functionless. Von Braunmuhl's silver stain (× 200).

FIGURE III.—Molecular layer of cerebral cortex showing gliosis (M). At G a group of glia cells, and around X and all over the area innumerable plaques show up as dull patches. Mallory's phospho-tungstic hæmatoxylin stain (× 200).

FIGURE IV.—Part of deeper cerebral cortex wherein two plaques are resolved into tangled masses of microglial cells with ordinary glia on the outside as at M and the arrow. Penfield-Cone silver stain (× 400).

FIGURE V.—Cerebellar cortex. G line separates the granular layer (right, at bottom) from the molecular layer (left and top). No Purkinje cells are seen here, but two large blobs in G line and a larger one above G represent plaques, the largest one red with a blue centre. Mallory's triple stain (× 400).

Reviews.

PROGRESS IN MEDICINE.

THE progress that has been made in general medicine during the period August, 1945, to June, 1946, is recorded in "The 1946 Year Book of General Medicine".[1] This year book is well known to practitioners as being one of the thirteen volumes comprising the "Practical Medicine Series". This series has been published regularly since the year 1900.

The first part of the book is devoted to infectious diseases and is edited by George F. Dick. Of this part, the first section deals with general considerations, and here reference is made to such subjects as the nature of resistance of Gram-negative bacilli to penicillin, the treatment of mixed infections with penicillin, the penicillin treatment of serous cavity infections, the effect of sulphonamides on the action of penicillin, chemoprophylaxis and sulphonamide-resistant streptococci and streptomycin. In regard to chemoprophylaxis observations are recorded on the use of sulphadiazine. One period of prophylaxis was successful when applied to three naval training schools. During a second period there was an increasing prevalence of strains of group A hæmolytic streptococci resistant to sulphadiazine. The editor questions whether the prophylactic use of sulphonamides is justified. In the section on bacteria reference is made to the use of penicillin in scarlet fever and tetanus and to some observations on the absorption and excretion of streptomycin in chronic typhoid carriers. In the section on rickettsia and viruses, several articles deal with vaccination against epidemic influenza and others are concerned with poliomyelitis, these indicating, as the editor points out, that for the most part poliomyelitis is transmitted much in the manner of typhoid fever. In the section on protozoa and helminths several references are made to malaria.

The part on diseases of the chest (excluding the heart) is edited by J. Burns Amberson. This part comprises twelve sections. The subjects covered in each of them are well chosen. Special attention may perhaps be drawn to remarks on traumatic hæmothorax and hæmopneumothorax, on traumatic wet lung, on the treatment of empyema, on bronchogenic carcinoma and on mediastinal tumours. Discussions on pneumonia cover twenty-eight pages. The section on tuberculosis deals with a wide range of subjects; streptomycin and its use in the treatment of clinical tuberculosis is covered by a preliminary report by Hinshaw and Feldman; and reference is made to rest in bed, to temporary paralysis of the diphragm and the use of pneumoperitoneum and to thoracoplasty.

The part on diseases of the blood and blood-forming organs and on diseases of the kidney is edited by G. R. Minot and W. B. Castle. This part includes sections on the different types of anæmia; the aspects discussed are too numerous to be described in this place. An important section deals with agranulocytosis. Here reference is made to toxic alimentary aleukia, a new malady described in the Union of Socialist Soviet Republics. The editor remarks that the description of this illness is reminiscent of various deficiency syndromes in animals related to lack of the *Lactobacillus casei* factor or due to competition with it by some toxic factor. Agranulocytosis due to drugs is covered. Its treatment is shown to consist of discontinuance of the drug and the use of penicillin to prevent progress of a secondary infection.

In the part on diseases of the heart and blood vessels, edited by William D. Stroud, there is included an obituary notice of the late Sir Thomas Lewis. In this part ætiological, anatomical and physiological diagnosis is discussed. Electrocardiography is dealt with and there is a useful section devoted to treatment.

The last part of this comprehensive work deals with diseases of the digestive system and metabolism. Every section of the digestive system is dealt with, including the pancreas, and here is included a well reproduced colour illustration of discoloration of the abdominal wall produced by acute pancreatitis. Dysentery and amœbiasis are discussed and the book concludes with an important section on metabolism and nutrition.

From the foregoing it will be seen that this year's volume may be recommended with confidence as a worthy successor to the volumes of previous years.

[1] "The 1946 Year Book of General Medicine", edited by George F. Dick, M.D., J. Burns Amberson, M.D., George R. Minot, M.D., S.D., F.R.C.P. (Edinburgh and London), William B. Castle, M.D., S.M., M.D. (Hon.), Utrecht, William D. Stroud, M.D., George B. Eusterman, M.D.; 1946. Chicago: The Year Book Publishers, Incorporated. 7" × 4¾", pp. 744, with illustrations.

PENICILLIN.

"PENICILLIN, ITS PROPERTIES, USES AND PREPARATIONS", published by direction of the Council of the Pharmaceutical Society of Great Britain, is a comprehensive answer to countless inquiries by pharmacists and practitioners of the editor of *The Pharmaceutical Journal* during the first few years after the discovery of penicillin.[1] It does in fact provide an answer to every possible aspect of penicillin.

The chemical and pharmaceutical portions of the book are somewhat specialized for the general medical reader, but the material contained therein is clearly set out and readily understandable by anyone appreciating the rudiments of organic chemistry. For those requiring further detail an excellent bibliography is included.

The book commences, as all such comprehensive expositions on penicillin should, with a brief historical survey; then follow methods of commercial manufacture. The relative merits of deep and surface culture are debated and an interesting section is given on methods of improving the mould strain. It is enlightening to learn that the highest natural yield came from a mouldy canteloupe in Peoria Market, and that by exposure of the mould to ultra-violet light, a mutation of the chromosomes occurs giving a strain with the remarkably high yield of 800 units per millilitre.

The autopolyploidy phenomenon is worthy of special note: colchicine is employed to arrest division of the mould cell, after division of the chromosomes but before that of the cytoplasm, so that cells with double the number of chromosomes occur; these are subcultured until cells with sixteen

[1] "Penicillin: Its Properties, Uses and Preparations", published by direction of the Council of the Pharmaceutical Society of Great Britain; 1946. London: The Pharmaceutical Press. 8¾" × 5½", pp. 208, with illustrations. Price: 10s. 6d.

times the normal number of chromosomes are obtained, these cells giving six to eight times as much penicillin as the original strain.

The reason for the non-appearance of authoritative publications on the chemistry and synthesis of penicillin is stated to be the Anglo-United States agreement made in July, 1946, by which the results of research from both countries are pooled and subject to official secrecy, pending the publication of a joint Anglo-United States treatise. The authors consider that in view of the known structure of the penicillin molecule, the chance that synthetic material will ever replace the biological product is very slender.

The four types of penicillin are discussed, both British numeral and American letter nomenclature being given. All are dipeptides with the molecular formula $C_9H_{11}O_4N_2SR_2$, the only difference between them being the radical R. All are monobasic acids. By alkali hydrolysis penicilloic acid is formed. Acid hydrolysis, the formation of penicillenic acid and the preparation of the benzyl ester are discussed.

Penicillin I (F) is less effective than penicillin II (G) or III (X) against the gonococcus. Penicillin III (X) is more effective than II (G) against the pneumococcus and streptococcus, and most effective against the gonococcus. While penicillin IV (K) gives lower and less sustained blood levels, and is excreted less, suggesting greater blood destruction, it is also one-sixth to one-fifteenth as effective as penicillin II (G) against the pneumococcus or streptococcus, and half as effective in staphylococcal infections.

Clinical uses and methods of application are comprehensively examined, including the problems of sensitivity, allergy and pain at the site of injection. A Herxheimer reaction with exacerbation of the skin eruptions can occur when syphilis is treated with penicillin; it is very similar to that obtained from arsensicals.

There have been conflicting reports with regard to the development of penicillin resistance in any microorganism. These authors state that it can be produced *in vitro*, but that evidence suggests that *in vivo* the possibility is slight; nevertheless the clinician should aim at avoiding the risk by using large doses in the first stages of a disease.

The chapters on pharmacy and the dispensing of the numerous preparations of penicillin should be of great value, as a useful array of recipies and chemical formulæ are included.

Finally legal considerations with regard to manufacture, distribution, packing and labelling *et cetera* are given, both for the United Kingdom and more briefly for the United States of America.

Three appendices follow, giving amendments to the British Pharmacopœia and statutory rules and orders.

The book concludes with a good index and undoubtedly abundantly fulfills the purpose which the Council of the Pharmaceutical Society sought to attain.

THE CARE OF YOUNG BABIES.

Six years ago the publication of Dr. John Gibbens's book, "The Care of Young Babies", emphasized to medical practitioners and parents the principles of individual treatment of individual babies. The successful presentation of his case is evident from the number of reprint impressions of the book and the publication of a second edition.[1]

Individual treatment of individual babies is the expression of modern mothercraft teaching and practice and is often misunderstood because so many mothers receive what appears to be "routine" advice at infant welfare centres.

The book is well set out, comprehensive and full of common-sense instructions and observations. The reasons for many minor and major difficulties are explained in such a way that parents can readily make their own adjustments early or avoid them altogether and at the same time realize when to seek medical advice if the adjustments fail.

One of the most valuable contributions in the book is the author's advice to fathers, in which he presents a clear picture of the important part they can play and their responsibilities.

The contention that breast milk is the most suitable food for the human baby and that cessation of this method of feeding should take place only after adequate investigation of all factors, is well put forward. The author rightly states the fact that it is unnecessary to use dried cow's milk except when poor housing and careless management may indicate a special need, or for some other unusual reason.

The tables and other data on artificial and complementary feeding differ somewhat from the standards used in this country, but there is little significance in this. Many problems which face parents, such as protection against infectious diseases, are placed before them in a practical and direct manner which makes discussions with the doctor and the subsequent decisions more satisfactory than they otherwise would be.

Medical practitioners will welcome the second edition of this splendid volume with its experienced statement of the care of young babies and will appreciate the scientific background of modern infant welfare methods which are so clearly emphasized.

[1] "The Care of Young Babies", by John Gibbens, M.B. (Cambridge), M.R.C.P. (London), with a foreword by Sir Robert Hutchison, Bt., M.D. (Edinburgh), F.R.C.P. (London); Second Edition; 1946. London: J. and A. Churchill, Limited. 7¼" × 5", pp. 214, with illustrations. Price: 5s.

FLYING FOX AND DRIFTING SAND.

FRANCIS RATCLIFF has produced a most fascinating book in "Flying Fox and Drifting Sand".[1] It concerns only a limited portion of Australia in some ways, though the author in his scientific investigations studied the large bats which range over some 2,000 miles of the north-eastern coastal belt, and later turned to the problem of soil erosion as seen in that area of the continent which takes in part of South Australia, Northern Territory, Queensland and New South Wales. Though he was not able to suggest any practicable or fresh method of dealing with either problem, he brought forward a wealth of scientific observations, the gist of which he presents in a fascinating fashion in this book. The book is not only about flying foxes and the ever-creeping dust and sand. The author makes us see and hear the life of the wastes and of the rain forest; he describes it like an artist. There must be very many people in Australia who have never watched the plants grow after rain, or learnt to know the perils of the lawyer vine and Laportea, the stinging tree, or studied the bird life, or even learnt to know those people whose resource and courage have led them away from their cities that are, after all, like all other cities. Not only these starved souls but the more enlightened will enjoy this book. It emphasizes the lesson that we have peopled the interior in some parts all too well, that we have not learnt that droughts are part of our heritage. It also shows that the so-called flying foxes, though destructive to orchard fruit, depend rather upon non-cultivated sources of food, which is just as well, as the chance of abolishing them seems remote. No doubt the author in his work with the entomological service of the Australian army used to advantage the same powers of observation as in the writing of this book. We agree with Julian Huxley, who writes an introduction to it, that his former pupil has given an account of the human inhabitants of the regions he studied which is as enjoyable as his natural history. The volume is well produced and contains a number of most attractive illustrations.

THE EYE IN INTERNAL DISEASES.

IN choosing the title "The Eye Manifestations of Internal Diseases", I. S. Tassman inevitably invokes a comparison of his work with that of Gowers and Foster Moore.[2] Although the author protests that the text is not necessarily encyclopædic, he endeavours to describe as many diseases of the eye and associated structures as he can, "together with management, differential diagnosis, treatment and prognosis wherever possible". This is not a textbook of medical ophthalmology, but rather a long-winded digest, in the modern manner, of current opinion on diagnosis and treatment of diseases of the eye. In his anxiety to quote as many authorities as possible, the author, or rather the compiler, not infrequently leaves the subject at issue up in the air and the inexperienced reader bewildered.

The ophthalmologist will find the information supplied too meagre, and the physician will complain that it is too involved. Both will agree that the title of the book is misleading and the cost excessive.

[1] "Flying Fox and Drifting Sand: The Adventures of a Biologist in Australia", by Francis Ratcliff, with an introduction by Julian Huxley; 1947. Sydney, London: Angus and Robertson, Limited. 8½" × 5½", pp. 352, with many illustrations. Price: 12s. 6d.

[2] "The Eye Manifestations of Internal Diseases", by I. S. Tassman, M.D.; Second Edition; 1946. St. Louis: The C. V. Mosby Company; Melbourne: W. Ramsay (Surgical), Proprietary, Limited. 9½" × 6½", pp. 614, with many illustrations, some of them coloured. Price: 75s.

The Medical Journal of Australia

SATURDAY, JUNE 7, 1947.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

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PSYCHIATRY AND THE CRIMINAL.

WALTER LANGDON-BROWN has written that the province of medicine is conterminous with life—that nothing which throws light on life is alien from the subject to which we devote our very existence. While most medical practitioners know this to be true and are prepared to extend the horizon of medicine in all directions, there are possibly some who need to be reminded of it when they are asked to turn their attention to such a subject as criminology. Crime, criminals and their treatment, it may be argued, should be the concern of policemen, lawyers and judges. Is it not their duty to apprehend persons who are thought to have transgressed the criminal code, to determine their innocence or guilt and to apply the penalties provided by law to those judged to be guilty? This is, of course, true. But the community as a whole is concerned, because the community sets up standards of conduct by the laws that it makes, and also, as has been stated on previous occasions in these pages, may, by what it does or by what it fails to do, create predisposing causes to crime. Medical practitioners in general and psychiatrists in particular have as their special concern the treatment that is meted out to transgressors who are not mentally normal. In the report of the Commissioners of Prisons and Directors of Convict Prisons in Great Britain for the years 1942-1944, recently published, it is stated that of those who come to prison for the first time, 80% do not come back a second time. The 20% who do come back are the "hard core" of the prison problem; it is from them that the professional criminals of the future are recruited. Anything that can be done to reduce the figure of 20% is thus well worth while.

At the annual meeting of the Royal Medico-Psychological Association at Edinburgh last July Dr. W. Norwood East read in abstract a paper on "The Legal Aspects of Psychiatry: Crime and Punishment", which has now been published in full.[1] Lord Cooper, who was for six years a public prosecutor and for six years a judge, described Norwood East's contribution as one of the most balanced and judicial surveys of the difficult subject which he had been privileged to hear. Unfortunately it will not be possible to discuss Norwood East's views on the nature of crime—a fascinating subject, but too complex to be dealt with at present. Our author does declare towards the end of this section of his paper that this much is certain—"the treatment of criminals must be sometimes qualified by taking into consideration events in their lives which may reach far back into their personal history. Among still more distant factors we cannot disregard the inherited traits which influence character and the careers of reputable persons as well as criminals". Environmental stress in persons who are potential criminals has also to be considered. "Crime may result if the tendencies of the individual and the environmental conditions together outweigh the resistance which can be opposed to them." In the classification of criminals Norwood East accepts the three commonly accepted groups—accidental, occasional and habitual or professional. This classification represents a high, a medium or a low breaking-point, and may be combined with a reference to the causal instinct at fault in terms of acquisitiveness, aggressiveness, sexuality and parental or gregarious anomalies of behaviour. Norwood East completes the classification by including a reference to the mental condition of the offender. In this way an offender may be described as an accidental aggressive schizophrenic or an habitual acquisitive normal and so on. Briefly, the most satisfactory medical classification of offenders is into three groups—historical, instinctual and mental. Norwood East thinks that the legal method of dealing with persons who are insane is in practice as equitable as is possible in the present state of medical knowledge. He also suggests that the punitive treatment of some subnormals, psychopathic personalities and psychoneurotic offenders can be carried out more intelligently than at present if the public will accept psychiatric guidance in the matter. In this regard a pertinent suggestion was made by Dr. J. R. Rees in the discussion following the presentation of Norwood East's paper—that psychiatrists should be called in as experts for the Crown to give evidence to the court, and not as for the prosecution or the defence. This admirable, though, we fear, Utopian, suggestion is the kind of practice that should be adopted in regard to all expert medical evidence in courts of law. Anyone who has given intelligent thought to the subject will agree with Norwood East that the subject of punishment is surrounded with difficulty. He points out that many considerations modify the turpitude of a crime—the age and previous record of the accused, the motive for the offence, its danger to the community, the amount of premeditation exercised, the provocation and temptation to which the accused has been subjected, and so on. These factors are for the most part imponderable and different values will be assigned to them by different judges and juries. Provocation is not taken into account in the determination of the guilt of the accused, but it may be a factor when his degree of turpitude is estimated or his sentence determined. The usual aims of punishment are retribution, deterrence and reformation, and their relative importance varies with circumstances. Norwood East discusses these three points. The retributive element in punishment has a deep-seated biological sig-

[1] *The Journal of Mental Science*, October, 1946.

nificance. "In a cultured society it may be necessary, and advantageous if it preserves a correct relation between the turpitude of the offence and the severity of the award. At the same time justice must be dispassionate, and stress the need to restrict our abhorrence and disgust to proper proportions as well as oppose pusillanimous sentimentality by vigorous understanding. Moreover, we must not confuse retributive justice with vindictive punishment; revenge may be an evil to the avenger as well as to the object of his vengeance." Deterrence is regarded as "the effect upon potential criminals of the legal treatment of actual criminals". There are no means of assessing its importance; but it is "not merely an intuitive speculation", and its practical value cannot be denied. Reformation, we are told, may be considered as the result of purposive treatment directed towards the mental, moral and social rehabilitation of actual criminals. It can be measured with some degree of accuracy by follow-up studies. Reformation is most enduring when it arises "from within the offender"; it cannot be attained by severity on the one hand or sentimentality on the other. Norwood East does not accept the view that deterrent and reformative aims are opposed to one another. He believes rather that they are supplementary to a common purpose, the prevention of crime.

From the practical point of view the relationship between psychiatry and punishment is perhaps the most important aspect of this discussion. Some people seem to believe that psychiatry and psychiatrical methods of treatment should supersede the usual legal processes. Such an idea is, of course, ridiculous. Norwood East points out that such a view disregards the fact that legal and executive authorities are constantly using methods in which punishment and treatment are associated and that in the ordinary affairs of life we have to pay for our mistakes. He thinks that in Britain there is increasing acceptance of the view of prison psychiatrists, that punishment may be a valuable adjunct to treatment in selected cases of criminal behaviour associated with a minor mental abnormality. Perhaps a good way of expressing the matter is that psychiatry must be an adjunct to the usual legal methods and not a substitute. Norwood East reminds us that society will rightly refuse to hand over to doctors the powers of the court to decide on punishments. And we must agree that present-day punitive measures do meet with a large measure of success. The relationship of psychiatry to punishment, as Norwood East sees it, is concerned with diagnosis, prognosis and treatment. This is a clinical approach and he makes one or two good points. In diagnosis it may be necessary and wise to say: "I do not know." In prognosis the most reliable medical opinion may be the least assured. In treatment caution is necessary and overstatement harmful. Moreover the pronouncements of science must not be presented as the dictates of a cult.

From this stimulating paper by Norwood East it will be of interest to turn to an account of work that has been carried out at Wormwood Scrubs Prison near London. It may be remembered that in 1939 a report was published by the Home Office on work carried out by W. Norwood East and W. H. de B. Hubert (see THE MEDICAL JOURNAL OF AUSTRALIA, June 3, 1939) in the investigation of 400 cases. The recommendation of the two investigators was that a special institution should be created for the care, study and treatment of a selected group of criminals. The psychological unit at Wormwood Scrubs Prison reopened with the appointment of two special medical officers to assist Dr. H. T. P. Young who has been senior medical officer at the prison since psychological work was commenced there in 1934. In the departmental report for 1942-1944 that has been mentioned Young describes some recent work. First it must be stated that the following types of prisoner have been found unsuited for psychological treatment:

1. Those who are certifiable under either the *Lunacy* or *Mental Deficiency Act*.
2. Those who show intelligence inferiority to such a degree as to render them incapable of cooperating in treatment. An intelligence quotient below 85 would be a disqualification.
3. Those who are suffering from permanent organic cerebral changes.
4. Adults whose criminal activities show evidence of marked chronicity, or who are unwilling to cooperate in measures designed to modify their abnormal practices; and adolescents whose abnormality has existed from an early age and is combined with a closely related psychopathic heredity.
5. Those showing excessive resentment or undue resignation at their convictions or sentence.
6. Those whose attitude suggests that they have ulterior motives in seeking treatment.

Length of sentence had also to be considered. It was found inadvisable to submit for treatment prisoners serving sentences of which not less than four clear months remained after their transfer for treatment. It was found inadvisable to accept for treatment prisoners over thirty-five years of age. In 1943 the number of male prisoners referred for treatment was 70. The transfer of 10 was not approved, while in 42 cases individual treatment was denied or discontinued for the following reasons: the sentence was too short for the depth of analysis required (seven cases); the intelligence was too low (thirteen cases); constitutional psychopathy or organic cerebral lesions were present (six cases); a genuine desire for cure was absent (eight cases); other reasons (eight cases). The total number of prisoners who were given treatment during the year amounted to eighteen and the results varied from partial to complete relief. Young thinks that as the scope of psychotherapy, as well as its limitations, becomes more generally appreciated, the number of cases in which treatment during a sentence is applicable will increase. In another place in the report it is stated that the special institution recommended by East and Hubert in 1939 will be a great help in this matter.

Only the fringe of this important subject has been touched. A proper understanding and appreciation of what can be done and of what cannot be done are needed in the ranks of the medical profession as well as in those of the lawyers.

Current Comment.

DETERIORATION IN THE TROPICS.

THERE has long been a tradition, strongly held, that living in a tropical climate rapidly produces mental, moral and physical deterioration in the white man, and in fact in any who normally inhabit a more temperate zone. Although he was privately a little amused at the devotion of a number of regular British soldiers to such tropical

conventions as the midday siesta even in the relatively mild Mediterranean area, many an Australian felt that, on the transfer of our forces to frankly tropical spheres, climate would soon have its usual devastating effect. The devastation indeed followed, with repercussions on military campaigns, but as the problem of disease was attacked and in great degree solved, it became more and more apparent to the ordinary observer that the white man could live, and live strenuously, in the tropics under far from ideal conditions and show surprisingly little ill-effects; discomfort and the irritation of skin affections there might be, but little of that "rather pleasant morbid putrefaction of body and mind which has been termed 'tropical deterioration' or 'tropical neurasthenia'". This last happy phrase comes from a recent combined report[1] by a Canadian group and a United States group working on the same basic scheme in different tropical areas. The Canadians, R. M. Kark, H. F. Aiton and E. D. Pease, worked in India and Burma where they studied Indian soldiers exclusively; the group from the United States, W. B. Bean, C. R. Henderson, R. E. Johnson and L. M. Richardson, worked in the Pacific zone studying United States troops both white and coloured. The two teams trained together and used practically identical methods in their surveys; they investigated the nutrition and the general physical fitness of both base and combat troops. Bean *et alii* examined garrison troops on Hawaii, Guadalcanal, Guam and Iwo Jima, combat casualties from Okinawa, and, on Luzon, members of a regiment that had been in contact with the enemy continuously for four and a half months, these being examined within thirty-six hours of their withdrawal from the front line. The investigation of nutrition, which was very thorough, served only to emphasize the high quality of the rations supplied; the standard of the troops' nutrition was good whether they were on fresh, frozen or packaged rations. The investigators emphasize the importance of rations being palatable and presented in an acceptable form; they believe it important to maintain a sufficiently high caloric level, but no support is given to the advocates of a high vitamin intake in the tropics. There was little evidence that the severe tropical environment produced changes in physical fitness or morale which would not have occurred under the same types of stress in a more temperate climate. Skin complaints, mostly of a minor but very trying nature, and moderate loss in weight were common among troops in forward areas, but, generally speaking, their standard of physical fitness and morale was good, and higher than that of base troops.

Details of the findings of Kark *et alii* among the Indian troops are of less general interest, but some points are worth noting. Nutritional problems were difficult because of religious and group prejudices about food, and most of the observations and conclusions are relevant only to similar groups. One conclusion, however, should be mentioned; observations on a regiment of Gurkhas made it clear that excellent fitness and tactical efficiency are compatible with what by North American standards are low levels of several important constituents of the body, notably riboflavin, serum protein and ascorbic acid. The observation of most general interest comes from the comparison and contrast of two India transport units, the one a mule transport company, the other a motor transport company. Both had served in Burma for the same period, carrying out similar tasks in the same area; they were issued with the same rations. The muleteers worked excessively hard and under conditions of great difficulty, often exposed to the elements; the use of mosquito nets was difficult and they often drank unsterilized water; there were difficulties about supplementing their rations. The members of the motor transport company worked very hard, but not so hard as the muleteers; they were able to get reasonable rest and were less exposed; they used their mosquito nets and drank boiled water; they were able to supplement their rations. The muleteers were in extremely poor physical condition and unable to perform their duties efficiently; the motor transport drivers were tired but physically fit and efficient. The notable feature is not the contrast between the two which is sufficiently explained by the differences in their circumstances, but the persistent fitness and efficiency of the motor transport drivers despite strenuous tropical service under combat conditions for thirty months; as controls they make clear the importance in the deterioration of the muleteers of factors other than those of tropical climate.

This subject is still highly controversial and a great deal more work remains to be done, as was pointed out in a letter from D. H. K. Lee, published in this journal on March 17, 1945. However, Lee's own work among civilians and troops in Australia and New Guinea indicates that tropical deterioration is not a specific entity to be differentiated from deterioration elsewhere. The Canadian and United States workers are of the opinion that when deterioration does occur in the tropics it may be more disabling than elsewhere because of the existing natural environmental handicaps, and they, of course, accept the high tropical incidence of skin diseases, especially miliaria and fungous infections. But their general conclusion seems acceptable that there is little evidence of a specific effect of the tropics; under certain well-recognized types of stress not peculiar to the tropics men react and deteriorate similarly in tropical, temperate and cold environments. Perhaps we have in the past poured unjustified scorn on "mad dogs and Englishmen".

[1] *Medicine*, 1947.

GYNÆCOMASTIA DUE TO MALNUTRITION.

RECENTLY the occurrence of enlargement of the breasts in men has aroused some interest in medical literature. Some of the varied conditions in which it is found are not common in ordinary practice, such as leprosy, or adrenal cortical and testicular tumours, but as a clinical finding gynæcomastia is not so very uncommon. Karsner has given the incidence in the United States Army as 16 per 100,000 men.[2] Malnutrition as a cause is, we hope, not likely to produce it in the ordinary run of practice; fortunately conditions such as prevailed in the Japanese prison camps are foreign to medical practice as we know it.

Taking the opportunity afforded by the study of a number of American soldiers returned from imprisonment, G. Klatskin, W. T. Salter and F. D. Humm have produced two articles dealing with the subject from both the clinical and laboratory aspects.[3] About 300 soldiers were studied in an army hospital. These men had been imprisoned from early in 1942 till 1945, and in Japan and Korea in particular had suffered severe deprivation of necessary foods. Though some food was dropped by parachute, supplies did not become adequate until the men were released, but within three months all signs of malnutrition had disappeared. A total of 48 men had gynæcomastia, and 36 of these were investigated in hospital. Careful clinical examination of the breasts, testes and abdomen was made. The liver function was estimated by various standard methods, and the urine was examined for determination of 17-ketosteroids, œstrogen, cortin and gonadotropin. It was found that the enlargement of the breasts did not appear as a rule until malnutrition was prolonged; in some instances it was not manifest until shortly after a normal diet had been resumed. Tenderness of the breasts and particularly of the nipples was a constant symptom. In a few cases secretion from the nipple was noticed by the patients. The enlarged glandular tissue was easily demonstrated by palpation, and surrounding this was usually a little mass of fat. Biopsy showed hyperplasia of the ducts and some thickening of the epithelium, but no cyst formation was found. There were no acini. The dietaries of these patients during captivity were reconstructed. They showed the now well-known pattern of deficiency in Calories, protein and vitamins, and most of the men had suffered from beriberi, pellagra or scurvy, as well as from dysentery, malaria and hepatitis. It may be assumed also that there was a deficiency in mineral constituents of the diet. Enlargement of the liver was observed in more than a third of these men, though this has been found as a

[1] *British Medical Journal*, March 15, 1947.
[2] *The American Journal of the Medical Sciences*, January, 1947.

residue in those who have had an attack of infective hepatitis, and therefore it is hard to draw relevant deductions. Impairment of the liver function was usually associated with enlargement of the organ, but it is significant that in about a quarter of these men there was no history of hepatitis, and no other cause but malnutrition could be found. The authors therefore feel that the gynæcomastia seen in these men was certainly related to malnutrition.

There is, of course, every reason to believe that gynæcomastia is basically always due to endocrine disturbance, and in this research evidence of this was found. In a third of the cases atrophy of the testes was demonstrated by measurement, and assay of the semen confirmed this in a number of patients. Lack of libido was observed by a number of the men also. Biochemical investigation showed significantly lowered values for the 17-ketosteroids, but, though œstrogens were at the low end of the normal excretion range, there was no demonstrable abnormality of the other hormones excreted in the urine. The œstrogen-androgen ratio was normal. The findings corresponded with those observed in a control group of men with gynæcomastia in the civilian population, and thus the authors do not find any evidence to justify the view that their series is similar to the groups in which this condition may follow cirrhosis or acute hepatitis. They regard the endocrine disturbance as affecting possibly the pituitary-gonadal axis, or perhaps a temporary derangement of the liver may occur. These investigations and others on prisoners of war have added a good deal to our sum of knowledge about deficiency states. This knowledge is of great value, but we should all prefer it to have been gained in some other way.

INHERITANCE OF RETINOBLASTOMA.

A GOOD deal of work has been done in recent years to show that retinoblastoma (or glioma of the retina) is an hereditary form of neoplasm. In support of this, Harold F. Falls has investigated the pedigrees of two families, not previously reported, from the files of the University of Michigan Heredity Clinic.[1] In the first family, retinoblastoma occurred bilaterally in identical female twins, starting at the age of six months, or possibly earlier, in both. The parents were normal; satisfactory information about relatives was not available, but there was no evidence that tumours of the eye had occurred. However, the presence of practically identical tumours in uniovular twins is regarded by geneticists as strong evidence of heredity, and this was the third reported instance of the occurrence of retinoblastoma in both of identical twins. Mainly through lack of cooperation from the parents, effective treatment was denied the children, and they both perished within eighteen months of birth. The diagnosis was confirmed *post mortem*. In the case of the second family, the hereditary influence was more obvious. The mother of the child affected with retinoblastoma (confirmed microscopically after removal of the eye) had undergone enucleation of the left eye at the age of three and a half years for "glioma of the retina"; of her own eight siblings, four had ocular tumours, three dying from the tumour in infancy (one despite enucleation of the eye) and the fourth surviving enucleation of her eye (in which a pathologist found "glioma of the retina") to bear a normal healthy child.

The mechanism of inheritance of this condition is still rather obscure, but that it is hereditary seems beyond doubt. Falls recommends that parents who have produced a child with retinoblastoma should be urged to discontinue having children, advice that will be generally approved; he goes further, however, and strongly advocates that children surviving enucleation of the eye for the condition be sterilized, a radical measure which most doctors would hesitate to support if only because of medico-legal difficulties. One further point seems worthy of mention, though omitted by Falls; that is, that if any one of the parents or siblings of a newly born child has had an eye removed for retinoblastoma or for an unknown cause, the child should be kept under the observation of a practitioner competent to make an early diagnosis if the tumour should occur. The combination in retinoblastoma of a strong hereditary tendency, a high and rapid mortality, and the real hope of cure following enucleation of the affected eye offers an inference too clear to be neglected.

[1] *The Journal of the American Medical Association*, January 18, 1947.

PROGRESS IN PANCREATIC AND BILIARY TRACT SURGERY.

SURGICAL attacks upon the pancreas have been so difficult technically and so fraught with the hazards of biochemical upset and hæmorrhage (especially when jaundice is present) that it has remained relatively inviolate, until the last decade or so. In 1905 Moynihan wrote regarding the reported operations for carcinoma of the pancreas: "The results serve to show that the mechanical difficulties of the operation are well nigh insuperable, and that if boldness and good fortune are the operator's gifts, the result to the patient hardly justifies the means." This view prevailed for thirty years, until in 1935 Whipple, Parsons and Mullins were able to report success with a two-stage operation. Since then part or the whole of the pancreas has been successfully removed for a variety of indications, which have included carcinoma of the pancreas and the ampulla-papillary region, chronic pancreatitis, and hyperinsulinism. The biochemical problem is indeed complex. The pancreas has an external secretion with at least three functions, an internal secretion, insulin, concerned with carbohydrate metabolism, and possibly a second internal secretion affecting fat metabolism. To make matters more involved, any obstructive condition at the lower end of the common bile duct must lead to jaundice and to interference with hepatic function. It is in the light of these manifold difficulties that the successful cases now being reported must be appreciated.

T. M. J. D'Offay,[1] referring in particular to malignant disease, has reviewed some recent advances in the surgery of the pancreas and biliary tract, and includes some case reports. D'Offay first insists that a distinction must be drawn between carcinoma originating in the pancreas itself and that arising from the duodenal papilla, the ampulla of Vater, and the terminal inch of the common bile duct. The distinction is difficult before and at operation, but although both types have many features in common, they differ fundamentally in their pathology and prognosis. The ampulla-papillary group is considered as one type because of the impossibility of determining the exact site of origin in many cases, even after microscopic examination. It is only in recent years that carcinomata in this region have commenced to yield to surgical skill and ingenuity, helped greatly by advances in biochemistry and by transfusion of blood. Carcinoma of the head of the pancreas arises from the acini or smaller ducts, and in most cases shows high malignancy and a tendency to early metastasis. Ampulla-papillary carcinoma, by contrast, remains localized and metastasizes late. Carcinoma of the ampulla-papillary region, and to a less extent of the head, possesses only one good feature: the development of jaundice at a relatively early stage. Recent studies indicate that this jaundice is by no means always painless and progressive, as is the orthodox teaching. Loss of weight, anorexia and asthenia are early, rapidly progressive features in carcinoma of the head of the pancreas, whereas in ampulla-papillary carcinoma they are less marked, and manifest themselves only after the onset of jaundice. The author supports the validity of Courvoisier's law, but points out that the distended gall-bladder can be felt clinically in only half the cases. Liver function tests are most useful and constitute an important advance in the diagnosis and treatment of jaundiced states. They may reliably assist in distinguishing between obstructive and hepatogenous jaundice, and they help to detect liver insufficiency and thus offer a guide in pre-operative preparation, surgical

[1] *The British Journal of Surgery*, October, 1946.

management and prognosis. In the diagnosis of obscure cases aspiration biopsy of the liver has proved of value, but is not without risk, and in 2% to 10% of biopsies the specimen is insufficient. The author regards peritoneoscopy as being of much greater value, as the liver, gall-bladder and peritoneal cavity generally may be viewed, and a biopsy specimen taken from the liver.

D'Offay briefly reviews the operative procedures which have been employed for the removal of pancreatic growths. A milestone in progress was the practical application to man of the discovery made in dog experiments in 1918, that the animal could survive the total loss of duodenal and pancreatic secretions. Fortified by this knowledge, Whipple, Parsons and Mullins in 1935 removed most of the duodenum and the head of the pancreas, with closure of the pancreatic stump and the duodenal ends. This patient made a rapid recovery and there was no subsequent interference with the digestion of fat and protein, or with carbohydrate metabolism. Whipple and his associates had performed the operation in two stages, an initial cholecyst-gastrostomy and gastro-jejunostomy being followed by the resection two weeks later. Brunschwig in 1937 improved the procedure by substituting a cholecyst-jejunostomy with jejuno-jejunostomy, which reduced the risk of cholangitis and also caused less technical difficulty in the second stage. He further made the resection more radical. This branch of surgery received fresh impetus from the discovery of vitamin *K* and its place in combating bleeding due to prothrombin deficiency. This, coupled with a better understanding of blood and plasma transfusions, has helped greatly to transform a rare and dangerous procedure into a relatively safe and common one. With the reports of an increasing number of operations (64 by April, 1942), attention was attracted to the harmful effects of pancreatic exclusion, as a proportion of patients developed some impairment of carbohydrate metabolism, shown by varying degrees of diabetes, while others, probably a third, had deficient absorption of fat and protein. The mortality of the operation had been 32%, among the causes of death being bile peritonitis and the development of internal pancreatic fistula. As a result of these observations it has now become a routine procedure to anastomose the pancreatic stump, or the duct if dilated, to the jejunum or stomach. To avoid bile peritonitis the common bile duct should be anastomosed to the jejunum and its cut end tied and inverted with silk sutures. One hundred and twenty-five cases of radical pancreatico-duodenectomy have been reported since 1935, with an operative mortality of 28%, the best series being Cattell's, who in a two-year period performed the operation seventeen times with only two deaths; in all of these the pancreatic stump was anastomosed to the jejunum. D'Offay records his own experiences, including one transduodenal resection and three radical pancreatico-duodenectomies. In addition to the above cases, the surgeons of the Mayo Clinic[1] have reported four cases of successful total pancreatectomy.

ECZEMA AND ESSENTIAL FATTY ACIDS.

INFANTILE ECZEMA can be a most intractable condition, distressing in different ways to infant, parent and medical attendant. The relation of its occurrence to a disturbance in essential fatty acid metabolism has been the subject of investigation for some time now and appears to offer encouraging possibilities. Arild E. Hansen, Elizabeth M. Knott and Hilda F. Wiese, of Texas, and Eva Shaperman and Irvine McQuarrie, of Minneapolis, in a combined paper have presented recent investigations and their conclusions.[2] A total of 225 patients with eczema were investigated both clinically and by the study of their blood lipids. The findings in 101 control subjects were used in evaluating the significance of the blood lipid studies; the only practicable control method in the clinical approach was by the use, for observation, of preliminary "control periods", usually of four or more weeks, before any significant change was made in the therapeutic regimen. Serum lipid studies on 171 of the eczematous patients disclosed that 80% of infants under two years of age, 75% of children between two and fifteen years, inclusive, and slightly over 50% of adults had iodine numbers for the serum fatty acids below the mean values for the 101 control subjects. When used as the sole form of therapy for 148 eczematous patients of various ages, addition to the diet of fats rich in unsaturated fatty acids, such as fresh lard and certain vegetable oils, produced a clinical response judged to be good to excellent in 60 and fair to good in 51 instances. The remaining 37 patients showed slight or no benefit. Most of the latter were in the older age group. The lard, which was sometimes mixed with other more palatable foodstuffs, was given in amounts averaging one to two ounces daily. Periodic studies of the serum lipids for patients with eczema revealed a tendency for the iodine numbers of the serum fatty acids to increase as the clinical condition improved following supplementation of the diet with fats rich in unsaturated fatty acids. An increase in the degree of unsaturation of the serum fatty acids was observed also to coincide with clinical improvement of patients treated solely with crude coal tar ointment.

These findings have implications which are much more subtle than a mere indication to administer unsaturated fatty acids to patients suffering from eczema. As Alton Goldbloom pointed out in the discussion which followed the paper, the important consideration is "that mechanism in the organism which regulates the metabolism of saturated and unsaturated fatty acids"; this is perhaps an enzyme system whose derangement is the essential cause of the skin condition. Hansen and his co-workers, while being convinced of the clinical improvement which follows the inclusion in the diet of fats rich in unsaturated fatty acids, emphasize the importance of meticulous investigation and the use of other forms of treatment. In their experience the combination of the unsaturated fatty acid regimen with such therapeutic procedures as topical applications of crude coal tar ointment and elimination from the diet of all foods to which the patient is known to be sensitive has proved to be most successful. Their results among infants were much better than those among adults. This work is only just beginning but appears to have important possibilities. It seems likely that benefit will come from the administration of unsaturated fatty acids to patients, especially infants suffering from eczema, but such therapy is at present little more than empirical. A great deal of work has yet to be done on the biochemical aspects of the problem. Determination of the exact physiological relationship between the metabolism of the fatty acids and the nutrition and integrity of the skin may bring the solution to many difficult dermatological problems, and in particular to that of infantile eczema.

[1] *Proceedings of the Staff Meetings of the Mayo Clinic*, January 23, 1946.
[2] *American Journal of Diseases of Children*, January, 1947.

MOTOR-CARS IN FRANCE: THE PLIGHT OF PARISIAN DOCTORS.

MEDICAL PRACTITIONERS in Australia who are having difficulty in securing suitable motor-cars for their daily requirements in practice will be interested in a report published in *The Times* of March 8, 1947. It is stated that more than eight hundred doctors of the Paris region marched through the heart of the city in protest at what they considered were insufficient transport facilities. They carried placards asking for more motor-cars, and on the placards were such slogans as: "Cars exported to get dollars." "How many dollars is the life of a Frenchman worth?" A letter was handed to the Minister for National Economy stating that two thousand Parisian doctors were without motor-cars, that others had only "wheezing" vehicles, and only sixty-three motor-cars had been distributed between seven thousand doctors since the liberation. The Minister replied that three hundred new motor-cars would be distributed amongst doctors every three months and that the quota would soon be increased to four hundred.

Abstracts from Medical Literature.

OPHTHALMOLOGY.

Detachment of the Retina.

H. ARRUGA (*Archives of Ophthalmology*, November, 1946) discusses the pathological and therapeutic aspects of detachment of the retina. In regard to the pathological considerations, he states that in order that the retina may become detached, the margins of the tear must invert slightly toward the interior of the eye, so that with movements of the eyeball the vitreous strikes against them. This destroys the framework of the vitreous which passes behind the retina. The elevation of the margins of the retinal hole is facilitated by post-inflammatory degenerative or senile retraction of the framework of the vitreous. The retina does not become detached if it is adhering to the chorioid as well as to the framework of the vitreous. For this reason chronic and degenerative processes are more likely to predispose to retinal detachment than are intense chorio-retinal inflammatory processes. Trauma is not as important as formerly considered. Retinas do not become detached unless they are diseased, except after extensive trauma; many times there is no real antecedent trauma; ocular trauma is relatively infrequent as a cause of detachment. More frequent causes are a blow on the cranium, a fall on the heels, sneezing, coughing, and above all excessive stooping. In discussing pathogenesis the author states that the fundamental concept of the movements of the eye as the factor which initiates and increases the detachment is becoming more definite, but the distinct clinical types of the condition and, above all, the varieties of its evolution show that other factors are also important. When the tear is small, there is rapid resorption of the subretinal fluid; when the hole is large, resorption is slow. The rapidity with which the retina tears is of great prognostic value. If the holes are small and do not enlarge there is evidence that the adhesions between vitreous and retina are not large and the prognosis is good. On the other hand the rapid formation of large tears indicates extreme friability of the retina or the existence of extensive adhesions between retina and vitreous, rendering treatment ineffective. With respect to treatment the factor of time is being disregarded. Given equal conditions of extent and bulging of the retina, it is much easier to cure a detachment of one or two months' duration with a small rent than one only a few days old with a large tear. The urgency in most cases does not lie in surgical intervention so much as in the need for bandaging the patient's eyes and enforcing relative repose. Another important factor which has most influence on the evolution and cure of retinal detachment is the condition of the chorioid. A detachment which is replaced with rest has good prognosis, for the chorioid is demonstrated to be in good condition for reabsorption. This proves its relative integrity, a necessary condition for exudation under irritating thermic action and for later resorption of the exudate and of the remaining subretinal fluid. On the other hand there are cases of recent detachment in which an apparently benign ophthalmoscopic picture is present, but in which there is little, if any, improvement with rest and a severe reaction on surgical intervention occurs. These cases are those in which the chorioid has no capacity to resorb and in which its probable inflammatory state causes it to respond to surgical attack with a severe local reaction. A similar reaction also appears with the episclera and in the bulbar conjunctiva. The manner in which the chorioid reacts has an influence on the intraocular pressure. If there are large recent tears the tension is usually low. After a few months the tension rises to normal because the chorioid cannot absorb more and is undergoing atrophy. If the holes are small and the tension is reduced, the prognosis is often good, because this indicates chorioidal absorption of the subretinal fluid. If the holes are small and the intraocular pressure at the same time remains elevated, the prognosis may be less favourable than would otherwise seem apparent, since this may indicate poor absorptive ability of the chorioid. Irritation of the ciliary body may alter these relations. The vitreous acts as a foreign body on the chorioid, which is finally destroyed. All retinal detachments of more than two years' duration are accompanied by complete atrophy of the chorioid. The manner in which the chorioid reacts to vitreous varies in different patients. To this variable chorioidal response is added the variable reaction to surgical thermic intervention. Consequently it is advisable to localize the diathermic action as much as possible. If it is necessary to reoperate, the difficulties are considerably increased in an eye which has undergone excessive diathermic treatment. Immediate repetition of the operation is advisable only when tears appear which were not reached by the preceding diathermic action. If a second operation is thus indicated, efforts should be made to insure that at least twenty days have elapsed since the first operation, that the eye does not suffer from the pain and photophobia which are characteristic of iridocyclitis, and that an exaggerated local reaction is not present. In cases which recur within the first two months after operation, if no tears are seen or if those which appear are situated in the area treated by diathermy, it is best not to operate. It is preferable to apply a binocular bandage and to make the patient rest in bed. The result of operation may yet be successful.

The Surgical Anatomy of the Facial Nerve.

M. KLEIN (*The British Journal of Ophthalmology*, November, 1946) reviews the literature relevant to orbicularis block. He also describes findings in eleven dissections of the facial nerve. It was found that the facial nerve curls round the condyle of the jaw, traversing the parotid gland. The main trunk divides into temporo-facial and cervico-facial portions 5·0 to 7·0 millimetres dorsal to the ramus of the mandible and on a slightly deeper plane. The temporo-facial division was found to be 1·5 to 2·5 centimetres below the lower margin of the zygomatic arch. This point is at about two-thirds of the level of the junction of the upper and middle thirds of the distance from the external angle of the mandible to the palpable condyloid process. The temporo-facial division which usually supplies the orbicularis muscle frequently receives rami from the cervico-facial division. The facial nerve lies between the two lobes of the parotid, partially separating the gland into a large superficial and a small deep portion. The author claims that the correct site of injection for palpebral akinesia is at the point of bifurcation of the nerve which is at the junction of the upper and middle thirds of the distance between the angle of the mandible and the palpable condyloid process. This point is considerably lower than that recommended by O'Brien. The needle of the syringe should aim at the posterior part of the lateral aspect of the mandible and should penetrate to a depth of 1·0 to 1·5 centimetres until the bone is reached. One to two millilitres of a 4% solution of procaine is injected as the needle is withdrawn. This method is expected to be effective in 90% to 95% of cases. In cases of failure the technique of Van Lint is recommended.

Treatment of Chronic Blepharo-Conjunctivitis with Penicillin Ointment.

S. H. STEIN (*Archives of Ophthalmology*, June, 1946) reports the results of treatment with penicillin ointment of 25 patients suffering from chronic blepharo-conjunctivitis. The penicillin was dissolved in an ophthalmic water-soluble ointment. The base consisted of wool fat (U.S.P.), 17%; white petroleum (U.S.P.), 51%; distilled water, 5%; and light liquid petroleum (U.S.P.), 22%. In the additional 5% of distilled water 100,000 Oxford units of penicillin were dissolved and then incorporated in 7·0 grammes of the ointment. This ointment remained potent after five weeks at room temperatures in the tropics. The author holds that it is safe to state that penicillin ointment for all practical purposes is stable for at least one month at room temperatures. The method of treatment was by single daily applications of the ointment.

Ætiology and Treatment of Blepharitis.

P. THYGESON (*Archives of Ophthalmology*, October, 1946) discusses the ætiology and treatment of blepharitis as he saw it in military personnel. He divides blepharitis into two types, (*a*) the squamous type with hyperæmia of the lid border with dry or greasy scales, and (*b*) the ulcerative type, characterized by small pustules involving the follicles of the cilia and leading to the formation of small ulcers. In a search for the ætiology an examination was made of the following associated parts: the scalp for evidence of dandruff; the face for infection of the skin, such as seborrhœic dermatitis and *acne rosacea*, and for evidence of seborrhœa; the external ears for *otitis externa*; the tongue, lips and corneal limbus for signs of vitamin *B* complex deficiency; the conjunctiva and cornea for Bitot's spots and keratinization as evidence of vitamin *A* deficiency; the cornea with fluorescein for evidence of catarrhal infiltration or ulceration and punctate epithelial staining of the type characteristic of staphylococcic infection; the Meibomian glands, with expression to determine existence of hyperactivity or meibomitis; and finally the lid margins, to determine by means of gross and

biomicroscopic observation the clinical type of blepharitis, the type of scales and the condition of the cilia. In addition the patient was questioned as to the duration of disease, the history or presence of staphylococcal infections, dietary habits, history of pruritus or other allergic manifestation. A comparative study of laboratory and clinical findings revealed that only three important ætiological types of marginal blepharitis could be distinguished, namely, blepharitis due to seborrhœic dermatitis, blepharitis due to staphylococci and blepharitis due to the Morax-Axenfeld diplobacillus. Secondary factors in the causation of blepharitis were found to be in order of importance: increased activity of the sebaceous Meibomian glands, poor personal hygiene and tropical climate. There was no evidence to indicate that vitamin deficiency, refractive error or allergy played significant roles. With respect to treatment the following medicaments were applied: antiseptic or germicidal drugs including silver nitrate, zinc sulphate, yellow mercuric oxide, ammoniated mercury, mercuric oxycyanide, mercury bichloride, tincture of iodine, salicylic acid, sulphur, resorcinol, quinoline and "Merthiolate"; dyes, including gentian violet and brilliant green; sulphonamide drugs; antibiotic substances, including penicillin and tyrothricin; and vaccines, including staphylococcus toxoid, toxoid combined with vaccine and stock and autogenous vaccine. Seborrhœic blepharitis responded best to: daily mechanical cleansings of the lid margins; frequent expression of the Meibomian glands; applications of 0·25% solution of silver nitrate to the conjunctiva and 1% silver nitrate solution to the lid margins twice a week; application twice a day of an ointment containing 1% yellow mercuric oxide and 1% salicylic acid to the lid margins; and treatment of associated seborrhœic dermatitis of the scalp, brows and external ears. Staphylococcal blepharitis responded well to topical treatment with penicillin, sulphathiazole or sulphadiazine and mercurial preparations. Blepharitis due to the Morax-Axenfeld diplobacillus responded rapidly to topical application of sulphathiazole in ointment form.

OTO-RHINO-LARYNGOLOGY.

Osteomyelitis of the Maxilla.

H. I. LILLIE (*Annals of Otology, Rhinology and Laryngology*, September, 1946) states that in the spreading type of osteomyelitis the nature of the bone and its blood supply are of importance, and more important still is the fact that the infecting organism is an anaerobe and is not susceptible to many therapeutic measures. The characteristics of the disease in the maxilla differ considerably from those of the disease occurring in the frontal bone. Since the vessels in the maxilla anastomose freely, there is often a minimal loss of bone, although with involvement of a main artery great loss of bone may follow. The author has previously reported conditions which he called peridacryocystitis and periosteomyelitis of the maxilla following operation on the maxillary sinus. The symptoms and signs were characteristic—severe facial pain and then the development of swelling and redness in the region of the lachrymal sac. Actual infection of the sac was not demonstrated at that stage. In subsequently observed cases the same clinical syndrome has been seen, and in five instances recorded with this paper, the progression to maxillary osteomyelitis with sequestrum formation has been observed. It is suggested that infection of the lachrymal duct, and of the rich plexus of veins surrounding it, is induced when, owing perhaps to a lowly placed inferior meatal opening, the lower end of the canal is injured or involved in reactionary swelling associated with the removal of the naso-antral wall. The sequence of events is thence probably retrograde thrombosis and infection extending to the lower end of the lachrymal sac causing swelling and abscess formation in the region of the inner canthus, which in turn causes elevation of the periosteum, thrombosis of some terminal vessels and sequestrum formation. Standard surgical therapeutic methods in the past were often not successful, except in some cases, owing to staphylococcal and hæmolytic streptococcal infection. Sulphonamides in certain cases proved to be a useful adjuvant, except in those cases which were found to be due to an anaerobe. Penicillin has proved to be dramatically effective in certain of these cases. When pus is present neither sulphonamides nor penicillin is effective without adequate surgical drainage. It is emphasized that surgical drainage should not be instituted before the formation of an abscess or phlegmon is manifest. Unlike the treatment of osteomyelitis of the frontal bone, it is not necessary at the outset to plan a surgical attack intended to remove bone well beyond the diseased segment. Chemotherapy should be instituted early and adequately and should be continued for several days following apparent control of the disease.

Tonsillectomy and Poliomyelitis.

DANIEL S. CUNNING (*Annals of Otology, Rhinology and Laryngology*, September, 1946) caused cards to be sent to 5,470 patients in the three to sixteen year age group who underwent tonsillectomy at the height of the epidemics in New York during the years 1942 to 1945. Replies were received from 2,289. There were three cases of poliomyelitis in the group. All were mild and none were of the bulbar type. Amongst other reports quoted, an earlier survey from the Manhattan Eye, Ear and Throat Hospital revealed but one case in 8,195 tonsillectomies. At a special hospital 104 patients with poliomyelitis were admitted, including 13 suffering from the bulbar type. None of these patients had had tonsillectomies within two months of the onset of the disease. In the figures for the year 1945 of the Connecticut State Board of Health 10,000 tonsillectomies were recorded. There were 214 cases of poliomyelitis reported in the State, 12 of bulbar type. None of the patients having the bulbar type had had recent tonsillectomy. From another New York hospital one case only of poliomyelitis, and that of the spinal type, was recorded as following recent removal of tonsils. Experimental initiation of the disease in monkeys has been produced by inoculation of virus into the tonsillo-pharyngeal tissues, yet the same worker failed to produce the disease by painting the virus over the operated area after tonsillectomy. Two other experimenters failed to produce infection in monkeys after flooding the operated region for five days with a virus suspension. While the author admits the wisdom of caution where there is risk of infection with so serious a disease, he concludes that the widespread alarm on the part of the public, shared by doctors in some communities, is unfounded on the basis of statistics. The study carried out at the Manhattan Eye, Ear and Throat Hospital on 11,204 tonsillectomies over a seven-year period revealed but four cases of poliomyelitis. None were of the bulbar type.

Neurinoma of the Facial Nerve.

KARSTEN KETTEL (*Archives of Otolaryngology*, September, 1946) states that neurinoma of the facial nerve, which arises from the sheath of Schwann, is very rarely found growing from a motor nerve, tending elsewhere to arise from unmixed sensory nerves such as the posterior spinal roots, and amongst cranial nerves, especially from the acoustic nerve. It is suggested that the relatively frequent occurrence of this tumour in the facial nerve may support a contention that this nerve carries some sensory fibres. Sixteen cases of neurinoma of the facial nerve have been reported in the literature. The growth generally develops in youngish people. The tumour most frequently arises from the descending portion of the facial nerve, less often from the horizontal portion. The first symptom is facial paralysis, and frequently this may be the only symptom for years. The onset may be gradual or may occur suddenly. The external acoustic meatus may become partly or completely occupied by tumour masses resembling the polypi of chronic otitis. The tympanic membrane may for long be intact, but in time middle ear suppuration may be induced as infection becomes added to the ingrowth within the middle ear. Severe pain is not usual. At operation there may be found either a well-defined minor focus around the *pars descendens* or there may be extensive destruction of the mastoid process, acoustic meatus, middle ear, labyrinth and petrous pyramid. The author's own case was in a woman, aged thirty-two years, who after a severe boring pain for twelve hours suddenly developed facial paralysis and gustatory disturbances. After being complete for two months, the paralysis gradually subsided without disappearing altogether, and remained thus for seven years. During the intervening years a dull boring pain was constantly present. Recurrence of paralysis developed after seven years and had remained complete so that a decompression operation, according to the method of Ballance and Duel, was undertaken. At operation, when the nerve was being traced from the stylomastoid foramen, a cavity was suddenly come upon and this contained greyish-red masses of granulations and a small tumour mass. The continuity of the facial nerve was found to be partly destroyed, and an attempt at repair was made, but after eighteen months the paralysis was still complete. A second operation was performed upon the nerve, a graft being used to restore continuity. In this case the external meatus, tympanic membrane and middle ear were not invaded by the tumour. The partial recovery of muscle power for a period of seven years and the complaint of persistent pain until relieved by operation were unusual features.

British Medical Association News.

SCIENTIFIC.

A MEETING of the Victorian Branch of the British Medical Association was held in the Medical Society Hall, East Melbourne, on Wednesday, April 2, 1947, DR. A. E. COATES, the President, in the chair. The meeting took the form of an exhibition of three films descriptive of surgical operations by MR. BALCOMBE QUICK and DR. J. B. TURNER, two Melbourne surgeons. The projection arrangements were by courtesy of Nicholas Proprietary, Limited, and the Ethical Division of that firm had sponsored the preparation of the films. The excellent colour photography was carried out by MR. MILTON RITTER, the photographer, and good judgement was shown by the provision of many close-up exposures and by the elimination of all non-essentials.

Dr. J. B. Turner showed first the ligature operation for internal hæmorrhoids and explained, though admittedly there were other useful operative procedures, that the one depicted was usually extremely satisfactory. He went on with his other film on combined perineo-abdominal resection of the rectum for carcinoma. He said that the resection commenced in the perineum and included the removal of the anal sphincter and the surrounding skin and connective tissue. Arrangements could be made for two surgeons to be at work synchronously in the two operative fields, or, alternatively, the senior surgeon could undertake the work in each field, starting in the perineum, or locating the tumour first by the abdominal approach. It was usual, of course, to have the assistance of at least one junior surgeon. Dr. Turner went on to say that the operation depicted in the film had several decided advantages over other operations for carcinoma of the rectum, though each case encountered had to be studied carefully and the details were designed to overcome the difficulties presented. There were occasions on which other operations were to be preferred to perineo-abdominal resection. Surgeons were liable to vary the technique from that shown in the film.

Mr. Balcombe Quick said that, though the film he was showing was entitled "An Operation for Hydatid of the Liver", it did not even attempt to cover the operative treatment of that disease. Most members of the audience would be familiar with the subject, but the film might help to fill a gap in surgical education in Britain and the United States where the disease was not well known. That possibility had been suggested to him recently by some of the visiting American surgeons who had seen an earlier film of his on the subject. The surgical pathology was obviously not thoroughly understood by some of the contributors to modern surgical textbooks.

Speaking of the popularity and value of the use of medical and surgical films by lecturers, Mr. Balcomb Quick said that, to be of real assistance, films must clearly show some clinical feature, technique or procedure which could not be demonstrated with satisfaction to all the members of the class or audience in any other way. The same viewpoint should be maintained and "close-ups" should be plentiful for clarity of presentation and to save the film from being nothing more than a glamorous distraction of attention or a display of surgical dexterity and slickness. He added that it was said that the Scientific Film Association had no less than fourteen films purporting to demonstrate the technique of Cæsarean section, not one of which was of the slightest use in the teaching of students.

At the termination of the projection of the films, the President announced that comments or questions were invited and that he hoped that there would be a good discussion.

DR. W. A. HAILES congratulated the surgeons on the excellence of the presentation of the matters covered by the photography and on the outstanding technical success of the films. Speaking first of the ligature operation for hernia, he said that it should be known widely that the operation could be done without inhalation anæsthesia and thus was available for patients who were very ill. Though Dr. Turner had advised moderate dilatation of the anus as a preliminary, Dr. Hailes studiously avoided dilatation beyond the point required for the introduction of an ordinary proctoscope; his object was to prevent post-operative paralysis of the sphincter and spasmodic pain; a further step that he took to save pain was to omit the introduction of the rubber tube into the anus at the end of the operation.

With reference to the surgery of carcinoma of the rectum, Dr. Hailes said that Dr. Turner had supplied the information that ten surgeons in Melbourne in recent years had attempted almost two hundred abdominal operations for selected patients with carcinoma of the rectum and that the mortality rate was unsatisfactory. Dr. Hailes had met a surgeon in the United States who was only forty-seven years of age, but had done almost a thousand of the operations himself and operated nowadays with great confidence and splendid results; specialization was necessary and general surgeons should pass the patients on to a surgeon who specialized intensively in that surgical field; only thus could they expect satisfactory results locally. In conclusion, Dr. Hailes referred briefly to the operation on the enormous hydatid cyst crowded with daughter and granddaughter cysts. He made the point that it was his personal practice to drain the cyst, as it was extremely difficult to be certain that it was quite empty, especially when it was large and the wall was collapsed on itself in a complicated fashion after the contents had been substantially removed.

DR. JOHN KENNEDY also commented on the photography as being unusually good and stated that he was greatly impressed by the demonstration. He discussed the advisability of removal of the tags after ligation and deprecated over-stretching of the sphincter. He said that stretching improved the exposure and prevented the painful and recurrent spasm for about forty-eight hours, but if over-stretched the sphincter might be paralysed forever. Dr. Kennedy drew attention to the reduction in the mortality rate for operative treatment of carcinoma of the rectum arising out of the modern use and availability of blood for transfusion and of penicillin and synthetic drugs such as the sulphonamides.

SIR ALAN NEWTON commented that a demonstration by films did not offer much scope for discussion, though the subjects about which the films treated were so large that discussion, if commenced, could not be adequately covered that evening. When Dr. Turner had stated that the cautery operations for internal hæmorrhoids were outmoded, Sir Alan Newton classed himself among the "has-beens" because he had used the cautery throughout his career. He agreed that the figures for rectal carcinoma locally were appalling, but he considered that those who first saw the patients had to share the blame with the surgeons who operated or who had to reject patients as not suitable any longer for operative treatment. Finally, Sir Alan Newton wished Mr. Balcombe Quick to know that he had not been as lucky as the latter had in "getting away with" the procedure of filling up old hydatid cysts with saline solution and closure of the cyst; it was often advantageous to drain the cyst posteriorly as well as anteriorly, especially when the cyst was large.

DR. T. H. ACKLAND referred to the use of drain tubes after the ligation of internal piles as an escape for blood; hæmorrhage might be reactionary and secondary and the rectum was capable of holding a lot of blood. He asked Dr. Turner to express an opinion on the value of the tube for exposing the occurrence of post-operative bleeding promptly, even though it was admitted freely that the presence of the tube increased the patient's pain and discomfort.

DR. W. OSTERMEYER expressed pleasure at the excellence of the photography which was astonishingly realistic; it was a revelation of the advantages of visual education even to see the young daughter cysts bubbling out of the wound.

Dr. W. A. Hailes spoke again to emphasize his plea for specialization by means of additional information of advances made in the United States through giving an individual the opportunity to accumulate experience rapidly and to apply the lessons he learned to the improvement of his procedure and technique. The younger experienced surgical specialists in this field were even preserving sphincters, and not seldom but practically every day. They even brought the patients back to trim them up. The sphincters were very useful, and, even though not truly continent, the patients could control anything except really liquid stools. There was great controversy as to the advisability of conservatism of any sort; the younger surgeons were always seeking improvements under the guidance of expert pathologists.

Dr. Turner, in reply, expressed gratification at the interest displayed in the demonstration. He went on to say that in rectal carcinomata the radical approach should be practised in approximately 80% of cases. The problem of preservation of the sphincter was an important one. He quoted from the statistics of one surgeon who in three years had performed three hundred of the operations with preservation of the sphincters, but he had had too many recurrences, and for many years there had been a swing away from attempts at preservation until the contemporary revival of the objective. Advantages hitherto not available should bring about notable reduction in the mortality rate and with it a diminution in the risk of recurrence.

Mr. Balcombe Quick, in reply, said that Dr. Hailes and Sir Alan Newton had referred to the vexed question of closure or drainage of hydatid cysts. When doubt existed as to the occurrence of entry of bile or infection of the cyst or if the surgeon was not satisfied that the cyst had been completely emptied of its contents, it was unquestionably advisable to insert a drainage tube. Accurate scrutiny was necessary when the cyst wall was billowy, but when it was firm and inspection was satisfactory the cyst could be closed with safety. His respected teacher, the late Hamilton Russell, had, at times, attempted closure in the face of frank infection treated with antiseptics. On some occasions the manœuvre had been a success, but on account of the preponderance of bad results the practice of closing infected cysts was abandoned in favour of "marsupialization". In conclusion, the speaker said that he had not used posterior in addition to anterior drainage and could not recall an example in which the procedure might have helped.

Dr. A. E. Coates, the President, on behalf of the members and the Branch Council, thanked Dr. Turner, Mr. Balcombe Quick and all those concerned in the production of the excellent films. In passing, he wished to remind members that the mouth and the rectum were equally available for careful inspection and palpation; patients with carcinoma of the rectum did not come to the right surgeon at the right time; that matter should be remedied. Dr. Coates, in conclusion, observed that the success that evening augured well for future meetings; members would be glad to know that the provision of facilities for the projection of moving pictures and improvements for the comfort of members were under consideration by the Branch Council.

NOTICE.

THE General Secretary of the Federal Council of the British Medical Association in Australia has announced that the following medical practitioners have been released from full-time duty with His Majesty's Forces and have resumed civil practice as from the date mentioned:

Dr. E. M. Slattery, 195, Macquarie Street, Sydney (March 2, 1947).

Dr. R. E. Wherrett, Labrador, 217, Macquarie Street, Sydney (May 20, 1947).

Naval, Military and Air Force.

APPOINTMENTS.

THE undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Numbers 85 and 90, of May 15 and 22, 1945.

CITIZEN NAVAL FORCES OF THE COMMONWEALTH.

Royal Australian Naval Volunteer Reserve.

To be Acting Surgeon Lieutenant-Commander.—Hamilton D'Arcy Sutherland, 12th December, 1945, seniority in rank 30th September, 1945 (seniority as Surgeon Lieutenant, 9th November, 1940).

To be Surgeon Lieutenants.—Norman Lennox Spiers, 16th April, 1945, seniority in rank 1st August, 1941; Austen Stewart Ferguson, 31st October, 1946, seniority in rank 2nd August, 1943.

AUSTRALIAN MILITARY FORCES.

Australian Army Medical Corps.

VX51843 Major (Temporary Lieutenant-Colonel) K. B. Brown is removed from the Regimental Supernumerary List, relinquishes the rank of Temporary Lieutenant-Colonel, ceases to be seconded to the Australian Imperial Force and resumes duty with the Active Citizen Military Forces (part-time duty), 22nd June, 1946 (in lieu of the notification respecting this officer which appeared in Executive Minute No. 178 of 1946, promulgated in *Commonwealth Gazette* No. 182 of 1946).

SX19025 Captain J. M. McPhie ceases to be seconded to the Australian Imperial Force and resumes duty in the Active Citizen Military Forces (part-time duty), 17th October, 1946 (in lieu of the notification respecting this officer which appeared in Executive Minute No. 259 of 1946, promulgated in *Commonwealth Gazette* No. 5 of 1947).

WX10 Lieutenant-Colonel (Temporary Colonel) J. H. Stubbe, E.D., relinquishes command of No. 110 (Perth) Military Hospital and is placed upon the Regimental Supernumerary List, 14th February, 1947.

VFX81148 Major (Temporary Lieutenant-Colonel) Lady W. I. E. MacKenzie relinquishes the rank of Temporary Lieutenant-Colonel and is transferred to the Reserve of Officers (Australian Army Medical Corps), 1st February, 1947.

VX199 Lieutenant-Colonel E. S. J. King is placed upon the Retired List with permission to retain his rank and wear the prescribed uniform, 16th October, 1946.

N90615 Major (Temporary Lieutenant-Colonel) F. N. Lynch relinquishes the rank of Temporary Lieutenant-Colonel and is placed upon the Retired List with the rank of Major and with permission to wear the prescribed uniform, 1st February, 1947.

80th Australian Camp Hospital.—TX16303 Captain K. L. Wise is transferred to Australian Army Medical Corps (Medical) Reinforcements, 11th February, 1947.

No. 105 (*Adelaide*) *Military Hospital.*—S2894 Captain (Temporary Major) J. E. Barker relinquishes the rank of Major, is transferred to the Reserve of Officers with the rank of Captain, and is granted the honorary rank of Major, 15th November, 1946 (in lieu of the notification respecting this officer which appeared in Executive Minute No. 21 of 1947, promulgated in *Commonwealth Gazette* No. 55 of 1947).

Reserve of Officers.

The undermentioned officers are transferred to the Reserve of Officers on the date indicated. Where applicable, they cease to be seconded and relinquish any temporary rank held with effect from the date of transfer to the Reserve of Officers:

VX96533 Captain S. J. Whiteside, 29th January, 1947.

No. 105 (*Adelaide*) *Military Hospital.*—Captains SX33397 J. H. Nicholls and SX34118 G. C. Thornton, 24th January, 1947.

No. 110 (*Perth*) *Military Hospital.*—WX20542 Captain C. E. Nulsen, 25th January, 1947.

No. 112 (*Brisbane*) *Military Hospital.*—QX64239 Captain K. J. M. Watson, 29th January, 1947.

No. 113 (*Concord*) *Military Hospital.*—NX70975 Captain (Temporary Major) W. K. Manning and NX203773 Captain G. C. Duncan, 10th January, 1947.

No. 115 (*Heidelberg*) *Military Hospital.*—Captains VX91932 B. R. Lewis, 18th January, 1947, and VX94148 H. M. Shaw, 22nd January, 1947.

28th Australian Camp Hospital.—VX104315 Captain L. B. Witts, 17th January, 1947.

Inter-Service Medical Wing Demobilization Centres (*Australian Military Forces Component*).—NX204016 Captain B. P. F. Mooney, 10th January, 1947.

Captains VX94242 B. M. Botterill, 10th January, 1947, VX93920 C. J. McRae and VX138511 J. Kremer, 3rd January, 1947, and NX203563 D. M. Storey, 24th December, 1946.

101st Australian General Hospital (*Australian Imperial Force*).—NFX141789 Major H. M. Taylor, 10th December, 1946, and Captains NX203772 A. F. Dwyer, 17th December, 1946, and NX166008 J. F. Gillogley, 21st December, 1946.

No. 110 (*Perth*) *Military Hospital.*—WX22326 Captain P. C. Yates, 14th January, 1947.

No. 112 (*Brisbane*) *Military Hospital.*—Q273988 Captain R. C. Black, 7th January, 1947.

No. 113 (*Concord*) *Military Hospital.*—Captains (Temporary Majors) NX207592 R. M. Rawle, 13th December, 1946, and NX114068 I. Monk, 24th December, 1946, and Captains NX153244 A. K. Sewell, NX201043 L. F. Rodriguez and NX204018 J. M. Rae, 20th December, 1946, and NX201216 N. A. Fowler and NX203249 B. L. Geddes, 4th January, 1947.

No. 115 (*Heidelberg*) *Military Hospital.*—VX94082 Captain W. E. Swaney, 3rd January, 1947.

2nd Australian Out-Patients' Depot.—VX92900 Captain E. S. Esnouf, 15th January, 1947.

50th Australian Camp Hospital.—VX93919 Captain H. P. Taft, 4th January, 1947.

70th Australian Camp Hospital.—NX204017 Captain J. W. Muller, 14th December, 1946.

77th Australian Camp Hospital.—NX206865 Captain G. W. Fitzhardinge, 10th December, 1946.

Inter-Service Medical Wing Demobilization Centres (*Australian Military Forces Component*).—Captains NX204015 G. B. Loveridge, 21st December, 1946, SX112067 C. T. James, 7th January, 1947, and SX34113 D. L. Davies, 11th January, 1947.

VX503645 Lieutenant-Colonel A. E. Coates, O.B.E., 11th January, 1947.

NX205420 Captain B. A. D. Curtin, 7th February, 1947.

No. 112 (*Brisbane*) *Military Hospital.*—QX63055 Captain L. H. Judd, 31st January, 1947.

No. 113 (*Concord*) *Military Hospital.*—NX206856 Captain G. Kerridge, 7th February, 1947.

No. 115 (*Heidelberg*) *Military Hospital.*—Captains NX200878 M. D. Owen, 11th February, 1947, and VX96329 S. C. Wigley, 5th February, 1947.

Inter-Service Medical Wing Demobilization Centres (*Australian Military Forces Component*).—QX63067 Captain R. Coutrice, 12th February, 1947.

The undermentioned officers are transferred to the Reserve of Officers on the dates indicated, and, where applicable, they cease to be seconded. Officers holding temporary rank relinquish such temporary rank on the date of transfer to the Reserve of Officers and are granted from such date honorary rank on the Reserve of Officers equivalent to the temporary rank relinquished:

VX60829 Captain (Temporary Major) H. H. McLennan, 22nd January, 1947.

No. 110 (*Perth*) *Military Hospital.*—WX3356 Captain (Temporary Major) A. J. King, 17th January, 1947.

Retired List.

The undermentioned officers are placed upon the Retired List on the dates indicated with permission to retain their present substantive rank and wear the prescribed uniform. Where applicable they cease to be seconded and relinquish any temporary rank held, with effect from the date of placement upon the Retired List:

No. 113 (*Concord*) *Military Hospital.*—NX202336 Captain D. L. Thomas, 4th January, 1947.

103*rd Australian Convalescent Depot.*—NX107369 Captain (Temporary Major) F. L. R. Sharp, 20th December, 1946.

Inter-Service Medical Wing Demobilization Centres (*Australian Military Forces Component*).—WX37187 Captain W. P. Harris, 9th January, 1947.

No. 110 (*Perth*) *Military Hospital.*—WF57075 Captain V. Cook, 8th February, 1947.

28*th Australian Camp Hospital.*—VX96335 Captain J. J. Bourke, 8th February, 1947.

Reserve Citizen Military Forces.

2nd Military District.—The undermentioned officers are retired: Captains L. E. Hewitt, L. E. S. Larbalester, J. McKell and P. J. Zeck, Lieutenant C. J. F. Sceats, Captains G. C. Spence and R. B. Speirs, 15th January, 1947, and Major S. A. Railton, 20th January, 1947.

4*th Military District*: *To be Honorary Captain, 13th January*, 1947.—Roland Maurice Charles Georges Beard.

2*nd Military District.*—Captain D. A. Holt is placed upon the Retired List with permission to retain her rank and wear the prescribed uniform, 13th January, 1947.

The undermentioned officers are retired: Honorary Captain G. W. Hollings, Captain J. Goldman, Honorary Captains D. F. Farmer, C. G. Barrett, F. W. Clements, B. Denning, C. E. North and H. A. McCredie, 10th January, 1947, and Honorary Captain J. M. Tiernan, 13th January, 1947.

The resignation of Honorary Captain C. P. Hudson of his commission is accepted, 7th January, 1947.

3rd Military District.—The following officers are retired, 22nd November, 1946: Captain M. F. A. Woodruff and Honorary Captain D. J. Oldmeadow.

The following officers are placed upon the Retired List with permission to retain their ranks and wear the prescribed uniform, 18th December, 1946: Honorary Colonel G. S. Robinson, M.C., E.D., and Major J. B. Bell.

The notification respecting Lieutenant-Colonel (Honorary Colonel) C. W. Ross, which appeared in Executive Minute No 178 of 1946, promulgated in *Commonwealth Gazette* No. 182 of 1946, is withdrawn.

4*th Military District.*—The notification respecting Honorary Colonel H. M. Fisher, which appeared in Executive Minute No. 118 of 1946, promulgated in *Commonwealth Gazette* No. 100 of 1946, is withdrawn.

4*th Military District*: *To be Honorary Captain, 29th January*, 1947.—Geoffrey Gurner Wyllie.

5*th Military District.*—The notification respecting Honorary Captain M. Slavin, which appeared in Executive Minute No. 257 of 1946, promulgated in *Commonwealth Gazette* No. 5 of 1947, is withdrawn. The notification respecting Honorary Captain J. F. Mitchell, which appeared in Executive Minute No. 257 of 1946, promulgated in *Commonwealth Gazette* No. 5 of 1947, is withdrawn. Captain L. A. M. B. Musso is retired at his own request, 5th February, 1947.

2*nd Military District.*—The notification respecting Honorary Captain L. H. Judd, which appeared in Executive Minute No. 14 of 1947, promulgated in *Commonwealth Gazette* No. 55 of 1947, is withdrawn.

3*rd Military District.*—The name of Captain H. L. Stokes is as now shown and not as it appeared in Executive Minute No. 14 of 1947, promulgated in *Commonwealth Gazette* No. 55 of 1947. The name Captain B. P. K. Sullivan, which appeared in Executive Minute No. 14 of 1947, promulgated in *Commonwealth Gazette* No. 55 of 1947, is amended to read "Captain B. P. K. Ryan".

ROYAL AUSTRALIAN AIR FORCE.

Citizen Air Force: Medical Branch.

The following Flight Lieutenants are granted the acting rank of Squadron Leader whilst occupying Squadron Leader posts: L. R. Trudinger (257718), 5th December, 1946, J. Beaumont-Haynes (265168), 11th February, 1947.

The appointment of Flight Lieutenant A. W. Burnell (287456) is terminated on demobilization, 1st April, 1947.

Reserve: Medical Branch.

Arthur William Burnell (287456) is appointed to a commission with the rank of Flight Lieutenant, 2nd April, 1947.

Post-Graduate Work.

THE POST-GRADUATE COMMITTEE IN MEDICINE IN THE UNIVERSITY OF SYDNEY.

WEEK-END COURSE AT BROKEN HILL.

THE Post-Graduate Committee in Medicine in the University of Sydney, in conjunction with the Broken Hill Medical Association, will hold a week-end course at the Broken Hill and District Hospital on Saturday, June 14, 1947, and Sunday, June 15, 1947. The programme is as follows:

Saturday, June 14, 1947.

Broken Hill and District Hospital.

2 p.m.—Registration.

2.30 p.m.—"Pre-Eclampsia and Eclampsia", Dr. Bruce Williams.

4 p.m.—"Recent Advances in Therapy", Part I, Dr. A. W. Morrow.

Sunday, June 15, 1947.

Broken Hill and District Hospital.

10 a.m.—"Intravenous Anæsthesia", Dr. S. V. Marshall.

11.30 a.m.—"Obstetric Difficulties", Dr. Bruce Williams.

2 p.m.—"Recent Advances in Therapy", Part II, Dr. A. W. Morrow.

3 p.m.—"Curare", Dr. S. V. Marshall.

The fee for the course will be £1 1s. There will be no charge for members of the defence forces. Those wishing to attend are requested to notify Dr. R. M. Hains, Honorary Secretary, Broken Hill Medical Association, Broken Hill, as soon as possible.

Correspondence.

A CONFERENCE ON CULTURE COLLECTIONS.

SIR: I have been asked by the Organizing Committee of the Specialist Conference on Culture Collections to present, if possible, the collective views of bacteriologists in Australia on this subject. This conference is to be held in London on August 5 to 8 inclusive.

As this request reached me on the eve of my departure for the United Kingdom, I have been unable to contact all interested persons in Australia before my departure for London. Accordingly I would be grateful if the following agenda of this specialist conference could be published in your columns so that Australian microbiologists may have the opportunity of expressing their views on the various points raised in this agenda.

May I suggest that any expressions of opinion be sent to me not later than July 16, c.o. Australia House, Strand, London.

The suggested agenda is as follows:

1. Aims and objectives of culture collections. (*a*) Collections of cultures for purposes of taxonomic research. (*b*) Working collections for medical, agricultural (veterinary, plant pathological *et cetera*) and industrial purposes.

2. Degree of centralization and duplication that is desirable for culture collections within the Commonwealth. (a) Should collection of cultures of fungi, bacteria algæ, protozoa and viruses be maintained separately?
3. Location and staffing of institutes in which culture collections are housed and the need for research to be carried on by the staff responsible for their maintenance.
4. Procedure for inclusion of cultures in collections and for their cataloguing, registration and interchange. (a) What cultures are suitable for inclusion in a collection? (b) Form of catalogues to be issued. (c) Desirability of publishing a directory of culture collections in the Commonwealth. (d) Need for each individual culture to bear an identification number, by which its original source can be found. (e) Interchange of cultures and information concerning additions and deletions.
5. Arrangements for coordinating research and for interchange of information on newer methods for preserving cultures.
6. Liaison between existing or proposed Commonwealth organizations and any international organizations or institutes that deal with cultures of microorganisms.
7. Desirability of maintaining collections of photographs of microbiological material and of photomicrographs relating to cultures.

Yours, etc.,

SYDNEY D. RUBBO,
Professor of Bacteriology,
University of Melbourne.

May 28, 1947.

Obituary.

WALTER CAMPBELL DOBBIE

We are indebted to Dr. P. T. S. Cherry for the following appreciation of the late Mr. Walter Campbell Dobbie.

The South Australian Branch of the British Medical Association suffered a severe and serious blow by the death of its lay secretary, Mr. Walter Campbell Dobbie, on May 7 last, in his seventy-first year. A South Australian by birth, he spent his whole life in the State, and this period was to be of immense value to all members of the Branch whether in the country or metropolitan areas. Office work and accountancy were his pursuits from his early days and he was for twenty years an accountant for a well-known business firm in Adelaide. On March 1, 1928, he was appointed lay secretary to our Branch from among no less than 151 applicants. His selection from so many was no easy work for the subcommittee appointed for the purpose, but his later record easily confirmed the wisdom and correctness of the choice. During his nineteen years in office he worked with tireless energy for the benefit of our profession and frequently did the work single handed or with very little assistance; unpaid overtime was quite the usual thing with him. Only those on the Council during his term of office know what he did for the Branch, especially throughout the last ten years, first with the tremendous amount of extra work entailed during the discussion on the National Insurance Bill, then for the unenviable six years of the second world war, and lately with the social services scheme of the present Federal Government. Before the outbreak of war his only son, Frank, assisted him in the office, but on the latter's enlistment for active service he worked for nearly six years without him.

He had a marvellous memory for detail, and apart from carefully minuted records he had a fund of knowledge in his head, uncommitted to paper, which unfortunately is lost to us all, but had he lived would have been invaluable to us in our controversy on nationalization. He was a power, a strength and encouragement to every incoming president and it was a delight to each one on his retirement to refer in his presidential address to Mr. Dobbie's wonderful help, loyalty and devotion to duty. The number of past presidents at the graveside was a testimony to his popularity and to their gratitude for what he had done for them. He was always just and fair to all; he was firm and did not hesitate to tell a member of the association if and where he was wrong, and in any diplomatic discussion with outside bodies he was impartially fair to both sides, although maintaining a strict loyalty to our profession. Those of us who have been a long time in the Council have lost a great friend and helpmate, and it is a very sincere tribute to his sterling work and character that the Council has unanimously appointed his son, Frank, a returned soldier, to succeed his father. Besides his son he has left a widow and two daughters, and to them we extend through this journal the deep sympathy of the whole Branch in their bereavement at the loss of a good husband and father.

Sir Henry Newland writes: *As one of the subcommittee of* the Council of the South Australian Branch of the British Medical Association who twenty years ago selected Walter Dobbie as competent to occupy the position of lay secretary, I have naturally followed his career with the greatest interest. He has justified his appointment over and over again. From the outset it has been remarkable that a man of his years (he was nearly fifty when he was appointed) should have been able to identify himself so closely, so loyally, and so well with the aspirations of the British Medical Association—the honour and interests of the profession. He scorned any retreat from that lofty standard.

As secretary of the British Medical Hall Company he maintained the same fine level of conduct in arranging the sale of practices and all the business of that agency.

Only the day before his death, alert in mind and body, he discussed with me the annual report of the Branch Council. That Council has suffered a grievous loss, but it is some consolation to know that Walter Dobbie's mantle has fallen on to the capable shoulders of his son, not long home from the war.

ARTHUR THEODORE LANGLEY.

WE regret to announce the death of Dr. Arthur Theodore *Langley, which occurred on May 20, 1947, at Melbourne.*

Australian Medical Board Proceedings.

NEW SOUTH WALES.

THE undermentioned have been registered, pursuant to the provisions of the *Medical Practitioners Act, 1938-1939*, of New South Wales, as duly qualified medical practitioners:

Fitzhardinge, Julie Maude, M.B., B.S., 1946 (Univ. Sydney), General Hospital, Brisbane, Queensland.
Gray, John Benjamin, M.B., B.S., 1946 (Univ. Sydney), District Hospital, Marrickville.
Hicks, Kenneth Edward, M.B., B.S., 1946 (Univ. Sydney), Maitland Hospital, Maitland.
Johnston, May Grace, M.B., B.S., 1946 (Univ. Sydney), District Hospital, Goulburn.
Moylan, William Anthony, M.B., B.S., 1946 (Univ. Sydney), District Hospital, Auburn.
Nicholson, Elinor Catherine, M.B., B.S., 1946 (Univ. Sydney), Saint Joseph's Hospital, Auburn.
Oakey, John Stuckey, M.B., B.S., 1946 (Univ. Sydney), Lewisham Hospital, Lewisham.
Palmer, Calvin Henry, M.B., B.S., 1946 (Univ. Sydney), Basé Hospital, Lismore.
Pentreath, Gladys Winnifred, M.B., B.S., 1946 (Univ. Sydney), c.o. P.O. Box 579, Hong Kong.
Somerville, Don McLachlan, M.B., B.S., 1946 (Univ. Sydney), Base Hospital, Orange.
Stephens, Frederick Richard Neason, M.B., B.S., 1946 (Univ. Sydney), Eastern Suburbs Hospital, Waverley.
Waugh, Martin Lindsay, M.B., B.S., 1946 (Univ. Sydney), Base Hospital, Orange.
Williams, Warwick Laurent, M.B., B.S., 1946 (Univ. Sydney), Mater Misericordiæ Hospital, North Sydney.
Wyse, Sydney James, M.B., B.S., 1946 (Univ. Sydney), 15, Toothill Street, Lewisham.

The following additional qualifications have been registered:

Hegarty, Vincent Henry, 71, Pittwater Road, Pymble (M.B., 1941, Univ. Sydney), B.S., 1946, Univ. Sydney.
Kennedy, Kevin, Saint Vincent's Hospital, Darlinghurst (M.B., 1946, Univ. Sydney), B.S., 1946, Univ. Sydney.
Lusby (now Fleming), Mary Gwenyth, 65, Muston Street, Mosman (M.B., B.S., 1939, Univ. Sydney), M.R.A.C.P., 1945.
Marrington, John Frederick, Tottenham (M.B., 1945, Univ. Sydney), B.S., 1946, Univ. Sydney.
Moss, John Timothy St. Leger, 189, Homer Street, Earlwood (M.B., 1945, Univ. Sydney), B.S., 1946, Univ. Sydney.
Radcliff, John Rothwell, c.o. Mr. F. W. Thomson, 115, Pitt Street, Sydney (M.B., 1934, Univ. Sydney), B.S., 1946, Univ. Sydney.
Sheehy, John Edward, 19, Queen Street, Croydon (M.B., 1944, Univ. Sydney), B.S., 1944, Univ. Sydney.

Yeates, Ronald Herbert, Boonah, Queensland (M.B., 1930, Univ. Sydney), B.S., 1946, Univ. Sydney.

Hirsz, Jehuda, 40, South Parade, Campsie (registered in accordance with the provisions of Section 17A of the *Medical Practitioners Act*, 1938-1939), M.B., B.S., 1946, Univ. Sydney.

Rychter, Oscar, 751, Darling Street, Rozelle (M.D., Univ. Paris, 1936, having passed examinations prescribed by the Univ. of Sydney under Section 4, Subsection (3), of the *Medical Practitioners Act*, 1912, as amended by Act Number 35, 1915), M.B., B.S., 1946, Univ. Sydney.

TASMANIA.

THE undermentioned have been registered, pursuant to the provisions of the *Medical Act*, 1918, of Tasmania, as duly qualified medical practitioners:

Murphy, Edward Joseph, M.B., B.Ch., 1919 (National Univ. of Ireland), Port Arthur, Tasmania.

Fisher, Elizabeth Mary Maxwell, M.B., B.S., 1944 (Univ. Sydney), Launceston.

Rush, Robert Donal, M.B., B.S., 1945 (Univ. Melbourne), Launceston.

Foley, Aileen Christina, M.B., B.S., 1940 (Univ. Melbourne), Queenstown.

The following additional qualification has been registered: Crowther, W. E. L. H., F.R.A.C.P., 1946.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Adams, David Joseph Monk, M.B., B.S., 1945 (Univ. Sydney), 8, Kuringai Avenue, Turramurra.

Shortland, Leonard Leslie, M.B., B.S., 1940 (Univ. Sydney), Maitland Road, Hexham, New South Wales.

McFarland, Dorothy Mae, M.B., B.S., 1946 (Univ. Sydney), Rachel Forster Hospital for Women and Children, Pitt Street, Redfern.

Taperell, Quentin John, provisional registration, 1947 (Univ. Sydney), 18, Rutledge Street, Eastwood.

Williams, Jenkyn Lawrence Kenneth, M.B., B.S., 1936 (Univ. Sydney), 220, Pacific Highway, Adamstown, New South Wales.

Cummins, George Edwardes, provisional registration, 1947 (Univ. Sydney), 52, Enmore Road, Newtown.

The undermentioned has applied for election as a member of the South Australian Branch of the British Medical Association:

Ball, Karl George, M.B., B.S., 1946 (Univ. Adelaide), 63, Park Terrace, Parkside.

The undermentioned have been elected as members of the South Australian Branch of the British Medical Association:

Bowler, John Kirkpatrick, M.B., B.S., 1937 (Univ. Adelaide), 11, Tapleys Hill Road, Seaton Park.

Murray, Gordon Seymour, M.B., B.S., 1944 (Univ. Adelaide), Box 41, Laura.

Corrigendum.

DR. MCKELLAR HALL has written in regard to the obituary notice of the late Donald Ian Robertson Smith, which was published in the issue of May 3, 1947. The authorship of the notice was attributed to Dr. Hall. Dr. Hall writes to explain that the author was a friend of Donald Smith's who wishes to remain anonymous.

Books Received.

"Gynecological and Obstetrical Pathology: With Clinical and Endocrine Relations", by Emil Novak, A.B., M.D., D.Sc. (Hon. Dublin), F.A.C.S.; Second Edition; 1947. Philadelphia, London: W. B. Saunders, Company; Melbourne: W. Ramsay (Surgical) Proprietary, Limited. 9¼" x 6¼", pp. 586, with many illustrations, some of them coloured. Price: 56s.

"Allergy in Theory and Practice", by Robert A. Cooke, M.D., Sc.D., F.A.C.P., in association with H. S. Baldwin, R. Chobot, R. C. Grove, J. Harkavy, S. Hebald, M. Heidelberger, P. Klemperer, L. Schwartz, W. C. Spain, D. D. Stetson, A. V. Veer, M. Walzer and M. B. Strauss; 1947. Philadelphia, London: W. B. Saunders, Company; Melbourne: W. Ramsay (Surgical) Proprietary, Limited. 9" x 6", pp. 598, with illustrations, some of them coloured. Price: 60s.

"Music in Medicine", by Sidney Licht, M.D.; 1946. Boston, Massachusetts: New England Conservatory of Music. 9" x 6", pp. 156. Price: $3.00.

Diary for the Month.

JUNE 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
JUNE 10.—Tasmanian Branch, B.M.A.: Ordinary Meeting.
JUNE 13.—Queensland Branch, B.M.A.: Council Meeting.
JUNE 16.—Victorian Branch, B.M.A.: Finance Meeting.
JUNE 17.—New South Wales Branch, B.M.A.: Medical Politics Committee.
JUNE 18.—Western Australian Branch, B.M.A.: General Meeting.
JUNE 19.—New South Wales Branch, B.M.A.: Clinical Meeting.
JUNE 19.—Victorian Branch, B.M.A.: Executive Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute; Brisbane City Council (Medical Officer of Health). Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia. All government appointments with the exception of those of the Department of Public Health.

Editorial Notices.

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